

**270 titled references relevant to
the physics of MRI up to the Spring of 1984**

Collected by Stanislav Sykora
while preparing the Italian book

Risonanza Magnetica Nucleare in Medicina

Ruffato C., Bonera G., Sykora S., Buttazzoni L., Paolucci G.
Piccin Nuova Libreria, Padova 1984,
([http://www.ebyte.it/stan/SS Papers.html#31](http://www.ebyte.it/stan/SS_Papers.html#31))

Parte III:

Principi fisici di formazione di immagine tramite RMN.

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1. Alfidi R. J./Haaga J. R./Yousef S. J./Bryan P. J./Fletcher B. D./Li Puma J. P./Morrison S. C./Kaufman B./Richey J. B./et al. Preliminary experimental results in humans and animals with a superconducting whole-body, NMR Scanner. *Radiology* 143: 175, 1982
2. Allen P. S. Nuclear magnetic resonance imaging in imaging with non-ionizing radiations. Ed. Jackson D. F., Surrey Uni Press, Glasgow, 1984
3. Andrew E. R. Imaging by nuclear magnetic resonance. *Phys. Bull.* :323, 1977
4. Andrew E. R. NMR Imaging. *Acc. Chem. Res.* 16: 114, 1983
5. Andrew E. R./Bottomley P. A./Hinshaw W. S./Holland G. N./Moore W. S./Simaraj C. NMR Images by the multiple sensitive-point method: application to larger biological systems. *Phys. Med. Biol.* 22:971, 1977
6. Aue W. P./Muller S./Cross T. A./Seelig J. Volume-Selective excitation. A novel approach to topical NMR. *J. Magn. Res.* 56: 350, 1984
7. Bartholdi E./Ernst R. R. Fourier spectroscopy and the causality principle. *J. Magn. Res.* 11:9, 1973
8. Battocletti J. H./Halbach R. E./Salles-Cunha S. X./Sances A. Jr. The NMR blood flow meter - Theory and history. *Med. Phys.* 8: 435, 1981
9. Battocletti J. H./Halbach R. E./Salles-Cunha S. X./et al. Clinical application of a nuclear magnetic resonance (NMR) Limb blood flow meter. *Proc. IEEE* 67: 1359, 1979
10. Battocletti J. H./Halbach R. E./Sances A. Jr./Larson S. J./Bowman R. L. /Kudravcev V. Flat crossed coil detector for blood flow measurements using nuclear magnetic resonance. *Med. Biol. Eng. Comput.* 17: 183, 1979
11. Bendall M. R. Depth and refocusing pulses designed for multipulse NMR with surface coils. *J. Magn. Res.* 53:365, 1983
12. Bendel P./Lai C. M./Lauterbur P. C. 31P Spectroscopic zeugmatography of phosphorus metabolites. *J. Magn. Res.* 38:343, 1980
13. Bene G. J. Nuclear magnetism of liquid systems in the earth field range. *Phys. Reports* 58:213, 1980
14. Bene G. J./Borcard B./Hiltbrand E./Magnin P. In situ identification of human physiological fluids by nuclear magnetism in earth's field. *Phil. Trans. R. Soc. B* 289:501, 1980
15. Bloch F./Hansen W. W./Packard M. The nuclear induction experiment. *Phys. Rev.* 70:474, 1946
16. Bottomley P. A. NMR Imaging techniques and applications: a review. *Rev. Sci. Instr.* 53: 1319, 1982
17. Bottomley P. A. A comparative evaluation of proton NMR imaging results. *J. Magn. Res.* 36: 121, 1979
18. Bottomley P. A. NMR imaging techniques and applications: a review. Corp. Res. and Dev. Report 81crd195., 1981 General Electric Co.
19. Bottomley P. A. A versatile magnetic-field gradient control system for NMR imaging. *J. Phys.* E 14: 1081, 1981
20. Bottomley P. A. Digital gradient magnetic-field reorientation in 3-dimensional NMR zeugmatography. *J. Phys.* E 14: 1052, 1981
21. Bottomley P. A. Localized NMR spectroscopy by the sensitive point method. *J. Magn. Res.* 50:335, 1982
22. Bottomley P. A./Andrew E. R. RF magnetic field penetration, phase shift, and power dissipation in biological tissue: implications for NMR imaging. *Phys. Med. Biol.* 23:630, 1978
23. Bottomley P. A./Kogure K./Namon R./Alonso O. F. Cerebral energy metabolism in rats studied by phosphorus nuclear magnetic resonance using surface coils. *Magn. Res. Imaging* 1:81, 1982
24. Bottomley P. A./et al. NMR imaging/spectroscopy system to study both anatomy and metabolism. *Lancet* 2(8344):273, 1983
25. Bracewell R. The fourier transform and its applications. *McGraw-Hill*, New York, 1965
26. Brasch R. C. Methods of contrast enhance-

- ment for NMR imaging and potential applications. *Radiology* 147:781, 1983
27. Brasch R. C./et al. NMR study of paramagnetic nitroxide contrast agent for enhancement of renal structures in experimental animals. *Radiology* 147:773, 1983
 28. Brasch R. C./et al. Contrast-enhanced NMR imaging. *American J. Radiol.* 142:625, 1984
 29. Brigham E. O. The fast fourier transform. *Prentice-Hall*, Englewood Cliffs, N. J., 1974
 30. Brooker H. R./Hinshaw. S. Thin section NMR imaging. *J. Magn. Res.* 30: 129, 1978
 31. Brooks R. A./Di Chiro G./Keller M. R. Explanation of cerebral white-gray contrast in computed tomography. *J. Comp. Assist. Tomogr.* 4:489, 1980
 32. Brunner P./Ernst R. R. Sensitivity and performance time in NMR imaging. *J. Magn. Res.* 33: 83, 1979
 33. Buchmann F./Heinzerling J. NMR-Tomographie. *Git Lab. Med.* 6: 102, 1983
 34. Buonocore M. H./Brody W. R./Macovski A. Natural pixel decomposition for two-dimensional image reconstruction. *Ieee Trans. Biomed. Engineering* Bme-28:69, 1981
 35. Bydder G.M./et al. Intravenous chelated gadolinium as a contrast agent in NMR imaging of cerebral tumours. *Lancet* 8375:485, 1984
 36. Carr H. Y. Steady-state free precession in nuclear magnetic resonance. *Phys. Rev.* 112: 1693, 1958
 37. Carr H. Y./Purcell E. M. Effects of diffusion on free precession in nuclear magnetic resonance experiments. *Phys. Rev.* 94:630, 1954
 38. Censor Y. Finite series-expansion reconstruction methods. *Proceedings of the Ieee* 71:409, 1983
 39. Chambron J./Armstrong J. P./Wecker D. Principles and methods of imaging by proton NMR. *J. Biophys. Med. Nucl.* 5:89, 1981
 40. Cho Z.H. General views on 3-D image reconstruction and computerized transverse axial tomography. *Ieee Trans. Nucl. Sci.* NS-21:44, 1974
 41. Cho Z. H./Burger J. Reconstruction, restoration and enhancement of 2- and 3-dimensional images. *Ieee Trans. Nucl. Sci.* NS-24: 886, 1977
 42. Cho Z. H./Hillal S. K./Kim H. S./Song H. B. Computer modeling and simulation of fourier transformation NMR imaging in "NMR imaging". *Ed. Partain C. L. et al., W. B. Saunders C., Philadelphia*, p. 453, 1983
 43. Cho Z.H./Kim H. S. Theory and technique for spatially resolved fourier transform NMR tomographic imaging Issl report #2:, 1980 Korea Advanced Institute of Science, Seoul, Korea.
 44. Cho Z. H./Kim H. S./Song H. B./Cumming J. Fourier transform nuclear magnetic resonance tomographic imaging. *Proc. Ieee* 70: 1152, 1982
 45. Cho Z. H./et al. Comparative study of 3-D image reconstruction algorithms with reference to number of projections and noise filtering. *Ieee Trans. Nucl. Sci.* NS-22:344, 1975
 46. Clayton C. G. (Ed) Modern developments in flow measurement Peter Peregrinus, London, 1972.
 47. Cooley J. W./Tukey J. W. An algorithm for the machine calculation of complex fourier series. *Math. Comput.* 19:297, 1985
 48. Cormack A. Reconstruction of densities from their projections, with applications in radiological physics. *Phys. Med. Biol.* 18: 194, 1973
 49. Cormack A. M. Representation of a function by its line integrals, with some radiological applications. *J. Appl. Phys.* 44:2722, 1983
 50. Cormack A. M. Representation of a function by its line integrals, with some radiological applications. II. *J. Appl. Phys.* 35:2908, 1964
 51. Cox S. F. J./Styles P. Towards biochemical imaging. *J. Magn. Res.* 40:209, 1980
 52. Crooks L. E. Selective irradiation line scan techniques for NMR imaging. *Ieee Trans. Nucl. Sci.* NS-27: 1239, 1980
 53. Crooks L. E./Arakawa M./Hoenninger J./Watts J./McRee R./Kaufman L./Davis P. L./Margulis A. R./De Groot J. Nuclear magnetic resonance whole-body imager operating at 3.5 kGauss. *Radiology* 143: 169, 1982
 54. Crooks L. E./Grover T. P./Kaufman L./Singer J. R. Tomographic imaging with nuclear magnetic resonance. *Invest. Radiol.* 13:63, 1978
 55. Crooks L. E./Hoenninger J./Arakawa M./Kaufman L./et al. Tomography of hydrogen with NMR and the potential for imaging other body constituents. *Spie* 206: 120, 1979
 56. Crooks L. E./Hoenninger J. C./Arakawa M./Kaufman L./McRee R./Watts J./Singer J. R. Tomography of hydrogen with nuclear magnetic resonance. *Radiology* 136:701, 1980
 57. Crooks L. E./Hoenninger J. C./et al. Tomography of hydrogen with NMR, and the potential for imaging other body constituents. *Inserm* 88: 19, 1979
 58. Crooks L. E./Mills C. M./Davis P. L./Hoenninger J./Arakawa M./Watts J./Kaufman L. Visualisation of cerebral and vascular abnormalities by NMR imaging. The effects of imaging parameters on contrast. *Radiology* 144:842, 1982
 59. Crooks L. E./Sheldon P./Kaufman L./Ro-

- man W./Miller T. Quantification of obstruction in vessels by nuclear magnetic resonance. *Ieee Trans. Nucl. Sci.* Ns-29: 1181, 1982
60. Crooks L. E./et al. Clinical efficiency of NMR imaging. *Radiology* 146: 123, 1983
 61. Crooks L. E./et al. High-resolution magnetic resonance imaging. *Radiology* 150: 163, 1984
 62. Dadok J./Sprecher R. F. Correlation NMR spectroscopy. *J. Magn. Res.* 13:243, 1974
 63. Damadian R. Tumor detection by nuclear magnetic resonance. *Science* 171: 1151, 1971
 64. Damadian R. NMR in medicine. Springer Verlag Berlin, Heidelberg, New York, 1981
 65. Damadian R. U. S. Patent 3, 789,832 filed March, 1972
 66. Damadian R./Goldsmith M./Minkoff L. NMR in cancer: XVI. Fonar image of the live human body. *Physiol. Chem. Phys.* 9:97, 1977
 67. Damadian R./Goldsmith M./Minkoff L. NMR in cancer: XX fonar scans of patients with cancer. *Physiol. Chem. Phys.* 10:285, 1978
 68. Damadian R./Minkoff L./Goldsmith M. NMR in cancer: XXI. Fonar scan of the live human abdomen. *Physiol. Chem. Phys.* 10:561, 1978
 69. Damadian R./Minkoff L./Goldsmith M./Koutcher J. A. Field-focusing nuclear magnetic resonance (Fonar). *Naturwissenschaften* 65: 250, 1978
 70. Damadian R./Minkoff L./Goldsmith M./Stanford M./Koutcher J. Field focusing nuclear magnetic resonance (Fonar): visualization of a tumor in a live animal: *Science* 194: 1430, 1976
 71. Damadian R./Minkoff L./Goldsmith M./Stanford M./Koutcher J. Tumor imaging in a live animal by field focusing NMR (Fonar) *Physiol. Chem. Phys.* 8:61, 1976
 72. Damadian R./Zaner K./Hor D./DiMaio R. Human tumors detected by NMR *Proc. Natl. Acad. Sci. Usa* 71: 1471, 1974
 73. De Luca F./De Simone B. C./Maraviglia B. Role of 3D imaging in small scale NMR tomography. *Magn. Res. Imaging* 1:205, 1982
 74. Delayre J. L./Ingwall J. S./Malloy C./Fossel E. T. Gated sodium-23 nuclear magnetic resonance images of an isolated perfused working rat heart. *Science* 212:935, 1981
 75. Doyle F. H./et al. Relaxation rate enhancement observed in vivo by NMR imaging. *J. Comp. Assist. Tomogr.* 5:295, 1981
 76. Dwek R. A. Nuclear magnetic resonance in biochemistry. Oxford, Clarendon, 1973
 77. Dwek R. A./Campbell I. D./Richards R. E./Williams R. J. P. (Eds) NMR in biology Academic press, New York, 1977
 78. Edelstein W. A./Bottomley P. A./Hart H. R./Smith L. S. Signal, noise, and contrast in nuclear magnetic resonance (NMR) imaging. *J. Computer assisted tomography* 7(3):391, 1983
 79. Edelstein W. A./Bottomley P. A./Pfeifer L. M. A signal-to-noise calibration procedure for NMR imaging systems. *Med. Phys.* 11 (2): 180, 1984
 80. Edelstein W. A./Hutchison J. M. S./Johnson G./Redpath T. Spin warp NMR imaging and applications to human whole body imaging *Phys. Med. Biol.* 25:751, 1980
 81. Edelstein W. A./Hutchison J. M. S./Smith F. W./Mallard J. R./Johnson G./Reopath T. W. Human whole body NMR tomographic imaging: normal sections. *Br. J. Radiol.* 54: 149, 1981
 82. Ernst R. R./Anderson W. A. Application of fourier transform spectroscopy to magnetic resonance *Rev. Sci. Instr.* 37:93, 1972
 83. Evelhoch J. L./Ackerman J. H. NMR T₁ measurements in inhomogeneous B₁ with surface coils. *J. Magn. Res.* 53:52, 1983
 84. Farrar T. C./Becker E. D. Pulse and fourier transform NMR: introduction to theory and methods. Academic press, New York, 1971
 85. Foster M. A./Dodd N. J. F./Hutchison J. M. S./Smith F. W. Magnetic resonance in medicine and biology. Pergamon press, Oxford, 1984
 86. Freeman R./Hill H. D. W. Phase and intensity anomalies in fourier transform NMR *J. Magn. Res.* 4:366, 1971
 87. Freeman R./Hill H. D. W. Fourier transform study of NMR spin-lattice relaxation by "progressive saturation" *J. Chem. Phys.* 54: 3367, 1971
 88. Freeman R./Hill H. D. W. Fourier transform study of NMR spin-spin relaxation. *J. Chem. Phys.* 55: 1985, 1971
 89. Friedburg H./et al. Duennschicht-NMR-imaging mit einem neuen T₂-Gewichteten 3-D-verfahren *Fortschr. Roentgenstr.* 140:464, 1984
 90. Fullerton G. D. Basic concepts for nuclear magnetic resonance imaging. *Magn. Res. Imaging* 1:39, 1982
 91. Fullerton G. D./Potter J. L./Dornbluth N. C. NMR relaxation of protons in tissues and other macromolecular water solutions. *Magn. Res. Imaging* 1:209, 1982
 92. Gadian D. G. NMR and its application to living systems. Oxford University press, Oxford, 1981
 93. Ganssen A./et al Kernspin-tomographie *Computer-Tomogr.* : 10, 1981
 94. Garroway A. N. Velocity measurements in flowing fluids by NMR. *J. Phys. D* 7:L159, 1974
 95. Garroway A. N./Grannell P. K./Mansfield

- P. Image formation in NMR by a selective irradiation process. *J. Phys. C: Solid state Phys.* 7:L457, 1974
96. Goldman N. R./Brady T. J./Pykett I. L./Burt C. T./Newhouse J. H./Buonanno F./Kistler P./Hinshaw W./Pohost G. Cardiac application of nuclear magnetic resonance imaging. In Bowman-Gray Symp. on NMR imaging. p. 171, 1981
 97. Gordon R. A tutorial on art (algebraic reconstruction techniques). *Ieee Trans. Nucl. Sci.* NS-21:78, 1974
 98. Gordon R. E./Bender R./Herman G. T. Algebraic reconstruction techniques (art) for three-dimensional electron microscopy and X-ray photography. *J. Theor. Biol.* 29: 471, 1970
 99. Gordon R. E./Hanley P. E./Shaw D./Gadian D. G./Radda G. K./Styles P./Chan L. Localization of metabolites in animals using P31 topical magnetic resonance. *Nature* 287: 736, 1980
 100. Gordon R. E./Herman G. T. Reconstruction of pictures from their projections. *Cacm* 14: 759, 1971
 101. Gore J. C./Doyle F. H./Pennok J. M. Relaxation rate enhancement observed in vivo by NMR imaging in nuclear magnetic imaging. Ed. Partain et al., W. B. Saunders C., Philadelphia, p. 94, 1983
 102. Grannell P. K./Mansfield P. Microscopy in vivo by nuclear magnetic resonance. *Phys. Med. Biol.* 20:477, 1975
 103. Granot J. Optimization of spin-lattice relaxation time measurements statistical analysis by stochastic simulation of ir exper. *J. Magn. Res* 53:386, 1983
 104. Grumbaum F. A. Reconstruction with arbitrary directions: dimensions two and three Math. Aspects of Comp. Tomogr.; Proceedings :, 1981 Springer-Verlag, Oberwolfach
 105. Gupta R. K./Ferreth J. A./Becker E. D. Rapid scan fourier transform NMR spectroscopy *J. Magn. Res.* 13:275, 1974
 106. Hahn E. L. Spin echoes. *Phys. Rev.* 80: 580, 1950
 107. Hall L. D./Sukumar S. Chemical microscopy using a HR-NMR spectrometer. A combination of tomography/spectroscopy using H1 or C13 *J. Magn. Res.* 50: 161, 1982
 108. Hall L. D./Sukumar S. Rapid data-acquisition technique for NMR imaging by the projection-reconstruction method. *J. Magn. Res.* 56: 179, 1984
 109. Hall L. D./Sukumar S. Three-dimensional fourier transform NMR imaging. High-resolution chemical-shift-resolved planar imaging. *J. Magn. Res.* 56:314, 1984
 110. Hall L. D./Sukumar S. A new image-processing method for NMR chemical microscopy. *J. Magn. Res.* 56:326, 1984
 111. Haselgrove J. C./et al. In vivo one-dimensional imaging of phosphorus metabolites by phosphorus-31 NMR. *Science* 220: 1170, 1983
 112. Hay G. A. Ed. Medical images: formation. Perception and measurement. Proc. 7th L. H. Gray Conf. :, 1976 Wiley, New York
 113. Hayward R. J./Packer K. J./Tomlinson D. J. Pulsed field-gradient spin echo NMR studies of flow in fluids *Mol. Phys.* 23: 1083, 1972
 114. Hazlewood C. F./Cleveland G./Medina D. Relationship between hydration and proton NMR relaxation times in tissues of tumor bearing and nontumor bearing mice *J. Natl. Cancer Inst.* 52: 1849, 1974
 115. Hazlewood C. F./Yamanashi W. S./Rangel R. A./Todd L. E. In vivo NMR imaging and T₁ measurements of water protons in the human brain. *Magn. Res. Imaging* 1:3, 1982
 116. Hemminga N. A./Jager D. A./Sonneveld A. The study of flow by pulsed NMR. I. Measurement of flow rates in the presence of a stationary phase using ... *J. Magn. Res.* 27: 1083, 1972
 117. Herman G. T. (Ed.) Image reconstruction from projections. Springer-Verlag, Berlin, 1979
 118. Herman G. T./Lewitt R. M. Overview of image reconstruction from projections in "image reconstruction from projections". Ed. Herman G. T., Springer-Verlag, Berlin, p. 1, 1979
 119. Herman G. T./Natterer F. (Eds.) Mathematical aspects of computerized tomography. Springer-Verlag, 1981
 120. Hinshaw W. S. Spin mapping: the application of moving gradients to NMR. *Phys. Lett. A* 48:87, 1974
 121. Hinshaw W. S. Image formation by nuclear magnetic resonance: the sensitive point method. *J. Appl. Phys.* 47:3709, 1976
 122. Hinshaw W. S./Andrew E. R./Bottomley P. A./Holland G. N./Moore W. S./Worthington B. S. Display of cross-sectional anatomy by nuclear magnetic resonance imaging. *Br. J. Radiol.* 51:273, 1978
 123. Hinshaw W. S./Andrew E. R./Bottomley P. A./Holland G. N./Moore W. S./Worthington B. S. An in-vivo study of the fore-arm and hand by thin section NMR imaging. *Br. J. Radiol.* 52:36, 1979
 124. Hinshaw W. S./Bottomley P. A./Holland G. N. Radiographic thin-section image of the human wrist by nuclear magnetic resonance *Nature* 270:722, 1977
 125. Hirschel L. R./Libelo L. F. NMR signal dependence on fluid velocity *J. Appl. Phys.* 33: 1895, 1962

126. Hirschel L. R./Libelo L. F. Nuclear magnetic resonance in flowing fluids. *J. Appl. Phys.* 32: 1404, 1961
127. Holland G. N. Nuclear magnetic resonance imaging and its applications. Nato Adv. Study Inst. Ser, 31 Adv. Technobiol. Ser. E1978:341, 1979
128. Holland G. N./Bottomley P. A. Color display technique for NMR imaging. *J. Phys. E* 10: 714, 1977
129. Holland G. N./Bottomley P. A./Hinshaw W. S. 19F Magnetic resonance imaging. *J. Magn. Res.* 28: 133, 1977
130. Holland G. N./Moore W. S./Hawkes R. C. Nuclear magnetic resonance tomography of the brain: coronal and saggital sections. *J. Comp. Assist. Tomogr.* 4:429, 1980
131. Holland G. N./Moore W. S./Hawkes R. C. Nuclear magnetic resonance tomography of the brain. *J. Comp. Assist. Tomogr.* 4: 1, 1980
132. Hoult D. I. Magnetic resonance in biology. Ed. Cohen J. S., John Wiley, New York, 1980
133. Hoult D. I. Rotating frame zeugmatography *J. Magn. Res.* 33: 183, 1979
134. Hoult D. I. NMR imaging. rotating frame selective pulses. *J. Magn. Res.* 38:369, 1980
135. Hoult D. I. Zeugmatography: a criticism of the concept of a selective pulse in the presence of a field gradient. *J. Magn. Res.* 26: 165, 1977
136. Hoult D. I. The solution of the bloch equations in the presence of a varying B_1 field-an approach to selective pulse analysis. *J. Magn. Res.* 35:69, 1979
137. Hoult D. I./Lauterbur P. C. Sensitivity of the zeugmatographic experiment involving human samples. *J. Magn. Res.* 34:425, 1979
138. House W. V. Introduction to the principles of NMR. *Ieee Trans. Nucl. Sci.* Ns-27: 1220, 1980
139. Hutchison J. M. S./Edelstein W. W./Johnson G. A whole-body NMR imaging machine. *J. Phys. E* 13:947, 1980
140. Hutchison J. M. S./Sutherland R. J./Mallard J. R. NMR imaging: image recovery under magnetic field with large non-uniformities. *J. Phys. E* 11:217, 1978
141. Inch W. R./McCredie J. A./Knispel R. R./Thompson R. T./Pintar M. M. Water content and proton spin relaxation times for malignant and non-malignant tissues from mice and humans. *J. Natl. Cancer Inst.* 52:353, 1974
142. Jackson D. F. (Ed) Progress in medical and environmental physics imaging with non-ionizing radiations. Surrey Uni press, 1984
143. Jaffe C. C. Medical imaging. *American Sci.* 70:576, 1982
144. Johnson G./Hutchison J. M. S./Eastwood L. M. Instrumentation for NMR spin-warp imaging. *J. Phys. E* 15:74, 1982
145. Kaufman L./Crooks L. E./Margulis A. R. Nuclear magnetic resonance imaging in medicine. Igaku-Shoin, New York, Tokyo, 1981
146. Kaufman L./Crooks L. E./Margulis A. R. Risonanza magnetica nucleare per immagini in medicina. Ed. Ruffato C./Buttazzoni L., Piccin, Padova, 1983
147. Kaufmann L./Shosa D. Quantitative characterization of signal-to-noise ratios in diagnostic imaging instrumentation. *Prog. Nucl. Med.* 7: 1, 1981
148. Kaufman L./Shosa D. W. Generalized methodology for the comparison of diagnostic imaging instrumentation. Afips Nat. Comput. Conf. Expo Cory Proc. 49:445, 1980
149. Kim H. S. Fast total volume plan integrals projection reconstruction using spin echoes. Issl Report #2:, 1980 Korea advanced Institute of Science, Seoul, Korea
150. Kim H. S./Kim Y. S./Cho Z. H./Hilal S. K. Phase delay and attenuation correction in fourier transform NMR imaging. *Ieee Trans. Nucl. Sci.* Ns-28: 142, 1981
151. King K. F. Signal-to-noise ratios in nuclear magnetic resonance imaging (thesis). University of Wisconsin, Madison, 1983
152. King K. F./Moran P. R. A unified description of NMR imaging, data collection strategies, and reconstruction. *Medical Physics* 11 (1): 1, 1984
153. Klug A./Crowther R. A. Three-dimensional image reconstruction from the viewpoint of information theory. *Nature* 238:435, 1972
154. Kumar A./Welti D./Ernst R. R. NMR fourier zeugmatography. *J. Magn. Res.* 18:69, 1975
155. Kumar A./Welti D./Ernst R. R. Imaging of macroscopic objects by NMR fourier zeugmatography. *Naturwissenschaften* 62:34, 1975
156. Lai C. M. True three-dimensional nuclear magnetic resonance imaging by fourier reconstruction zeugmatography. *J. Appl. Phys.* 52: 1141, 1981
157. Lai C. M. Reconstructing NMR images under nonlinear field gradients. *J. Phys. E* 16: 1983
158. Lai C. M. Reconstructing NMR images under magnetic fields with large inhomogeneities. *J. Phys. E* 15: 1093, 1982
159. Lai C. M./House W. V./Lauterbur P. C. Nuclear magnetic resonance zeugmatography for medical imaging. *Proc. of Ieee Electro/78 Conf.* :, 1978, Boston, Mass.
160. Lai C. M./Lauterbur P. C. A gradient control

- device for complete three-dimensional nuclear magnetic resonance zeugmatographic imaging. *J. Phys. E* 13:747, 1980
161. Lai C. M./Lauterbur P. C. True three-dimensional reconstruction by nuclear magnetic resonance zeugmatography. *Phys. Med. Biol.* 26: 851, 1981
 162. Lai C. M./Shook J. W./Lauterbur P. C. Micro-processor-controlled reorientation of magnetic-field gradients. *Chem. Biomed. Environ. Instrum.* 9: 1, 1979
 163. Lauterbur P. C. Image formation by induced local interactions: examples employing nuclear magnetic resonance. *Nature (London)* 242: 190, 1973
 164. Lauterbur P. C. Magnetic resonance zeugmatography. *Pure Appl. Chem.* 40: 149, 1974
 165. Lauterbur P. C. Medical imaging by NMR zeugmatography. *Ieee Trans. Nucl. Sci.* Ns-26:2808, 1979
 166. Lauterbur P. C./Kramer D. M./House W. V./Chen C. N. Zeugmatografic high resolution NMR spectroscopy: images of chemical inhomogeneity with macroscopic objects. *J. Am. Chem. Soc.* 97:6866, 1975
 167. Lauterbur P. C./Lai C. M. Zeugmatography by reconstruction from projections. *Ieee Trans. Nucl. Sci.* Ns-27: 1227, 1980
 168. Libove J./Singer J. R. Resolution and signal-to-noise relationships and NMR imaging in the human body. *J. Phys. E* 13:38, 1980
 169. Lindon J. C./Ferrige A. G. Digitization and data processing in fourier transform NMR. *Progress in NMR spectroscopy* 14:27, 1980, Ed. Emsley J. W./Feeney J./Sutcliffe L. H., Pergamon press, Oxford
 170. Ljunggren S. The influence of the waveform of the time-dep. Mag. Field grad. on the spatial loc. in the sensitive-point method ... *J. Magn. Res.* 54: 165, 1983
 171. Ljunggren S. A simple graphical representation of fourier-based imaging methods. *J. Magn. Res.* 54:338, 1983
 172. Loeffler W./Oppelt A. Physical principles of NMR tomography. *Eur. J. Radiol.* 1:338, 1981
 173. Louis A. K. Optimal sampling in nuclear magnetic resonance (NMR) tomography. *J. Comp. Assist. Tomogr.* 6:334, 1982
 174. Macovski A. Physical problems of computerized tomography. *Proceedings of the Ieee* 71:373, 1983
 175. Mansfield P. Multi-planar image formation using NMR spin echos. *J. Phys. C* 10:L55, 1977
 176. Mansfield P. Critical evaluation of NMR imaging techniques. *Proc. of Isnmri*: 81, 1981
 177. Mansfield P. Spatial mapping of the chemical shift in NMR. *J. Phys D* 16:L235, 1983
 178. Mansfield P./Grannell P. K. "Diffraction" and microscopy in solids and liquids by NMR. *Physical Review* 12:3618, 1975
 179. Mansfield P./Grannell P. K. NMR diffraction in solids. *J. Phys. C* 6: L422, 1973
 180. Mansfield P./Maudsley A. A. Planar spin imaging by NMR. *J. Magn. Res.* 27: 101, 1977
 181. Mansfield P./Maudsley A. A. Line scan proton spin imaging in biological structures by NMR. *Phys. Med. Biol.* 21: 847, 1976
 182. Mansfield P./Maudsley A. A. Planar spin imaging by NMR. *J. Phys. C* 9: L409, 1976
 183. Mansfield P./Maudsley A. A. Proc. Ampere Congr., 19TH. *groupment Ampere*, Heidelberg, p. 247, 1976
 184. Mansfield P./Maudsley A. A. Medical imaging by MMR. *Br. J. Radiol.* 50: 188, 1977
 185. Mansfield P./Maudsley A. A./Baines T. Fast scan proton density imaging by NMR. *J. Phys. E* 9:271, 1976
 186. Mansfield P./Maudsley A. A./Morris P. G./Pykett I. L. Selective pulses in NMR imaging: a reply to criticism. *J. Magn. Res.* 33: 261, 1979
 187. Mansfield P./Morris P. G. Advances in magnetic resonance: NMR imaging in biomedicine. Ed. Waugh J. S., Academic press, New York, 1982
 188. Mansfield P./Pykett I. L. Biological and medical imaging by NMR. *J. Magn. Res.* 29: 355, 1978
 189. Mansfield P./Pykett I. L./Morris P. G./Couppland R. E. Human whole-body line scan imaging by NMR. *Br. J. Radiol.* 51:921, 1978
 190. Mansfield P./et al. Real-time NMR clinical imaging in paediatrics. *Lancet* 8362: 1281, 1983
 191. Margulis A. R./Higgins C. B./Kaufman L./Crooks, L. E. (Eds). *Clinical magnetic resonance imaging*. Radiol. Res. and Educ. Found., San Francisco, 1983
 192. Marr R./Chen C./Lauterbur P. C. On two approaches to 3D reconstruction in NMR zeugmatography. Report BNL-28041/AMD-857 ;, 1980 Brookhaven National Laboratory
 193. Marr R. B./Chen C. N./Lauterbur P. C. On two approaches to 3D reconstruction in NMR zeugmatography. Lecture notes in medical informatics 8:225, 1981 Springer-Verlag, Berlin
 194. Martin M. L. J./Martin G. J./Delpuech J. J. *Practical NMR spectroscopy*. Heyden, London, 1980
 195. Maudsley A. A. Multiple-line-scanning spin density imaging. *J. Magn. Res.* 41: 112, 1980
 196. Maudsley A. A. Multiple line scanning NMR imaging in "NMR imaging". Ed. Partain C. L. et al., W. B. Saunders C., Philadelphia,

- p. 179, 1983
197. Maudsley A. A./Hilal S. K./Perman W. H./Simon H. E. Spatially resolved high resolution spectroscopy by "four-dimensional" NMR. *J. Magn. Res.* 51: 147, 1983
 198. Medina D./Hazlewood C. F./Cleveland G. G./Chang D. C./Spljnt H. J./Moyers R. NMR studies on human breast dysplasias and neoplasms. *J. Natl. Cancer Inst.* 54:813, 1975
 199. Mehier H./Hiltbrand E./Borcard B./Magnin P./Bene G./Peyrin J. O. Low field topical magnetism apparatus in a hospital area. *Mag. Res. Imag.* 1: 143, 1982
 200. Meiere F. T./Thatcher F. C. Resolution of the NMR images from the sensitive line method. *J. Appl. Phys.* 50:4491, 1979
 201. Moran P. R. A flow velocity zeugmatographic interlace for NMR imaging in humans. *Magn. Res. Imaging* 1: 197, 1982
 202. Morris G. A./Freeman R. Selective excitation in fourier transform nuclear magnetic resonance. *J. Magn. Res.* 29:433, 1978
 203. Morris P. G./Mansfield P./Pykett I. L./Ordidge R. J./Coupland R. E. Human whole-body line scan imaging by nuclear magnetic resonance. *IEEE Trans. Nucl. Sci.* Ns-26:2817, 1979
 204. Morse O. C./Singer J. R. Blood velocity measurements in intact subjects. *Science* 170:440, 1970
 205. Nalcioglu O./Cho Z. H. Reconstruction filters for 3-D NMR tomography with planar integrals. *IEEE Trans. Nucl. Sci.* Ns-31:553, 1984
 206. Nalcioglu O./Cho Z. H. 3-D interpolation technique for total volume imaging in NMR tomography. *IEEE Trans. Nucl. Sci.* Ns-30: 689, 1983
 207. Nunnally R. L./Bottomley P. A. Assessment of pharmacological treatment of myocardial infarction by phosphorus-31 NMR with surface coils. *Science* 211: 177, 1981
 208. Ordidge R. J./Mansfield P./Coupland R. E. Rapid biomedical imaging by NMR. *Br. J. Radiol.* 54:850, 1981
 209. Ordidge R. J./Mansfield P./Doyle M./Coupland R. E. Real-time moving images by NMR. *Radiology* 142:244, 1982
 210. Ortendahl D. A./Crooks L. E./Kaufman L. A comparison of the noise characteristics of projection reconstr. and 2-D fourier transformations in NMR imaging. *IEEE Trans. Nucl. Sci.* Ns-30:692, 1983
 211. Packer K. J. The study of slow coherent molecular motion by pulsed nuclear magnetic resonance. *Mol. Phys.* 17:355, 1969
 212. Partain C. L. et al. (Eds.) Nuclear magnetic resonance imaging. W. B. Saunders C., Philadelphia, 1983
 213. Partain C. L./et al. NMR imaging: an overview of the physical principles, clinical potential, and interrelationship with ... *Nucl. Med. Ann.*: 231, 1953
 214. Pykett I. L. NMR imaging in medicine. *Sci. Am.* 246(5):54, 1982
 215. Pykett I. L./Mansfield P. A line scan image study of a tumorous rat leg by NMR. *Phys. Med. Biol.* 23: 961, 1975
 216. Pykett I. L./Newhouse J. H./Buonanno F. S./Brady T. J./Goldman M. R./Kistler J. P./Pohost G. M. Principles of nuclear magnetic resonance imaging. *Radiology* 143: 157, 1982
 217. Pykett I. L./Rosen B. R. NMR: in vivo proton chemical shift imaging. *Radiology* 149: 197, 1983
 218. Pykett I. L./Rosen B. R./Buonanno F. S./Brady T. J. Measurement of spin-lattice relaxation times in nuclear magnetic resonance imaging. *Phys. Med. Biol.* 28:723, 1983
 219. Ra J. B./Kim Y. S./Kim H. S. Line integral projection reconstruction (LPR) and its derivatives in fourier transform NMR tomographic imaging. *Issl Report #2.*, 1980 Korea advanced Institute of Science, Seoul Korea.
 220. Ramachandran G. N./Lakshminarayan A. V. Three-dimensional reconstruction from radiographs and electron micrographs. *Proc. Natl. Acad. Sci. Usa* 68:2236, 1971
 221. Rosen B. R./Pykett I. L./Brady T. J. Spin lattice relaxation time measurements in 2D NMR imaging : corrections for plane selection and pulse sequence. *J. Comp. Assist. Tomogr.* 8: 195, 1984
 222. Ross B. D./Radda G. K./Gadian D. K./Rocker G./Esiri M. Falconer-Smith J. Examination of a case of suspected McArdle's syndrome by 31P nuclear magnetic resonance. *N. Engl. J. Med.* 304: 1338, 1981
 223. Rossman K. Point spread-function, line spread-function and the modulation transfer function tools for study of imaging systems. *Radiology* 93:257, 1969
 224. Roth K. NMR tomography and spectroscopy in medicine. Springer-Verlag, Berlin, 1984
 225. Rowland S. W. Computer implementation of image reconstruction formulas in "image reconstruction from projections". Ed. Herman G. T., Springer-Verlag, Berlin, p. 9, 1979
 226. Runge V. M./et al. Potential oral and intravenous paramagnetic NMR contrast agents. *Radiology* 147:789, 1983
 227. Rupp N./Reiser M./Stetter E. The diagnostic value of morphology and relaxation time in NMR imaging of the body. *Eur.J. Radiol* 3: 68, 1983
 228. Salles-Cunha S. X./Halback R.E./Battocletti J. H./Sances A. Jr The NMR blood flowmete-

- r - applications. *Medical Physics* 8(4):452, 1982
229. Schlenker M./Fink M./Goedgebuer J. P./Malgrange C./Vienot J. C./Wade R. H. (Eds.) Imaging processes and coherence in physics. Springer-Verlag, Berlin, 1980
 230. Scott K. N./Brooker H. R./Fitzsimmons J. R./Bennett H. F./Mick R. C. Spatial localization of ³¹P nuclear magnetic resonance signal by the sensitive point method. *J. Magn. Res.* 50:339, 1982
 231. Seikhara K./Kuroda M./Kohno H. Image restoration from non-uniform magnetic field influence for direct fourier NMR imaging. *Phys. Med. Biol* 29: 15, 1984
 232. Shah S. S./Ranade S.S./Phadke R. S./Kasturi S. R. Significance of water spin-lattice relaxation times in normal and malign. Tissues and their subcellular fractions-I. *Magn. Res. Imaging* 1:91, 1982
 233. Shah S. S./Ranade S. S./Phadke R S./Kasturi S. R. Significance of water proton spin-lattice relaxation times in normal and malign. tissues and their subcell fractions-II *Magn. Res. Imag.* 1: 155, 1982
 234. Shepp L. A. Computerized tomography and nuclear magnetic resonance. *J. Cup. Assist. Tomogr.* 4:94, 1980
 235. Shepp L. A./Logan B. F. The fourier reconstruction of a head section. *Ieee Trans. Nucl. Sci.* Ns-21:21, 1974
 236. Shepp L. A./Logan B. F. The fourier reconstruction of a head section *Ieee Trans. Nucl. Sci.* Ns-22:344, 1975
 237. Shosa D. W./Kaufman L. Methods for evaluation of diagnostic imaging instrumentation. *Phys. Med. Biol.* 26: 101, 1981
 238. Simon H. E. A whole body NMR imaging system with full three-dimensional capabilities. *Proc. Soc. Photo-opt. Instr. Eng.* 273: 41, 1981
 239. Singer J. R. Nuclear magnetic resonance diffusion and flow measurements and an introduction to spin phase Graphing. *J. Phys. E* 11:281, 1978
 240. Singer J. R. Blood flow rates by NMR measurements. *Science* 130:1652, 1959
 241. Singer J. R. NMR techniques for blood measurements. *J. Appl. Phys. Suppl.* 31:406s, 1960
 242. Singer J. R. Flow rates by nuclear and electron paramagnetic resonance methods. *J. Appl. Phys.* 31: 125, 1960
 243. Singer J. R./Crooks L. E. Some magnetic studies of normal and leukemic blood. *J. Clin. Eng.* 3: 237, 1978
 244. Singer J. R./Grover T. Recent measurements of flow using NMR techniques. In modern developements in flow measurement. Ed. Clayton C. G., Peter Peregrinus, London, p. 38, 1972
 245. Smith P. R./Peters T. M./Bates R. H. T. Image reconstruction from finite numbers of projections. *J. Phys.A* 6: 361,1973
 246. Song H. B. Extended line scanning tomography in spatially resolved fourier transform NMR imaging. *Issl Report #2:* 1980 Korea advanced Institute of Science, Seoul, Korea
 247. Steiner R.E. New imaging techniques; their relation to conventional radiology. *British Medical Journal (Clin.Res.)* 284 (6329): 1590, 1982
 248. Steiner R.E. The Hammersmith clinical experience with NMR. *Clin. Radiol.* 34: 13,1983
 249. Stejskal E.D./Tanner J.E. Spin diffusion measurements: spin echoes in the presence of a time-dependent field gradient. *J.Chem. Phys.* 42:288, 1985
 250. Sutherland R.J./Hutchison J.M.S. Three-dimensional NMR imaging using selective excitation. *J.Phys. E.* 11:79, 1978
 251. Tam A. M. Optimal choice of directions for the reconstruction of an object from a finite number of its plane integrals. Lawrence Berkeley Lab. Report #14127:, 1982
 252. Tan H. Nuclear spin density wave mapping by NMR time axis zeugmatography. *J. Magn. Res.* 45:356, 1981
 253. Taylor D. G./Bore C. F. A review of the magnetic resonance response of biological tissue and its applicability to the diagnosis of cancer... Computerized Tomography 5 (2): 122, 1981 .
 254. Thomas s.R./Ackerman J. L/Goebel J. R./Davis M./Kereiakes J. G/Lin Y. Y. NMR techniques as developed modestly within a university medical center environment: ... *Magn. Res. Imaging* 1: 11, 1982
 255. Thulborn K. R./Waterton J. C./Radda G. K. Proton imaging for in vivo blood flow and oxygen consumption measurements. *J. Magn. Res.* 45: 188, 1981
 256. Tomlinson B. L./Hill H. D. W. Fourier synthesized excitation of NMR with application to homonuclear decoupling and solvent line suppression. *J. Chem. Phys.* 59: 1775, 1973
 257. Tropper M. N. Image reconstruction for the NMR echo-planar technique, and a proposed adaptation to allow continuous data acquisition. *J. Magn. Res.* 42: 193, 1981
 258. Tsui E./Budinger T. A stochastic filter for transverse section reconstruction. *Ieee Trans. Nucl. Sci.* Ns-26:2687, 1979
 259. Vold R. L./Waugh J. S./Klein M. P./Phelps D. E. Measurement of spin relaxation in complex systems. *J. Chem. Phys.* 48:3831, 1968
 260. Weinmann H./et al. Characteristics of gado-

- linium-dtpa complex American J. Radiol. 142:619, 1984.
261. Wende S./Thelen M. Kernspin-tomographie in der medizin. Springer, Berlin, 1983
 262. Wesbey G. E./et al. NMR contrast enhancement study of the gastrointestinal tract of rats and a human volunteer using nontoxic oral ... *Radiology* 149: 175, 1983
 263. Williams E. S./Kaplan J. I./Thatcher F./Zimmerman G./Knoebel S. B. Prolongation of proton spin lattice relaxation times in regionally ischemic tissue from dog hearts. *J. Nucl. Med.* 21:449, 1980
 264. Wind R. A./Creyghton J. H. N./Ligthelm D. J. /Smidt J. Spatial selection in NMR by spin locking *J. Phys. C* 11:L223, 1978
 265. Wind R. A./Yannoni C. S. Selective spin imaging in solids. *J. Magn. Res.* 36:269, 1979
 266. Wood S.L/Morf M. Fast implementation of a minimum variance estimator for computerized tomography image reconstruction. *Ieee Trans. Biomed. Engineering* BME-28: 56, 1981
 267. Young I. R/Bailes D. R./Burl M./Collins A. G./Smith D. T./McDonnel H. R./Orr J.S./Banks L. M./Bydder G. M/et al. Initial clinical evaluation of a whole body nuclear magnetic resonance (NMR) tomograph. *J. Comp. Assist. Tomogr.* 6: 1, 1982
 268. Zeitler E./Schittenhelm R. Die kernspintomographie (KST) und ihre klinischen anwendungsmoeglichkeiten *Electromedica* 49:2, 1981
 269. Zhernovoi A. I./Latyshev L. F. Nuclear magnetic resonance in a flowing liouid. Consultants bureau, New York, 1965
 270. Ziessow V. D./Bluemich B. Hadamard NMR spektroskopie. *Berichte der bunsen gesell.* 78: 1168, 1974