

Publications of Dr. Rajaram Nityananda:

Optics

Rajaram Nityananda and S. Ramaseshan
Dispersion of the birefringence of quartz
J. Opt. Soc. Amer., 60, 1531 (1970)

Rajaram Nityananda
On the theory of light propagation in cholesteric liquid crystals
Mol. Cryst. Liq. Cryst., 21, 315 (1973)

Rajaram Nityananda
The cholesteric liquid crystal as a spatially dispersive medium
Pramana, 2, 35 (1974)

Rajaram Nityananda and U.D. Kini
The theory of reflexion and transmission by plane parallel cholesteric films
Proceedings of the International Conference on Liquid Crystals, Bangalore, 1973, ed. S. Chandrasekhar,
Pramana Suppl., 1, 311 (1975)

Rajaram Nityananda, U.D. Kini, S. Chandrasekhar and K.A. Suresh
Anomalous transmission (Borrmann effect) in absorbing cholesteric liquid crystals
Proceedings of the International Conference on Liquid Crystals, Bangalore, 1973, ed. S. Chandrasekhar,
Pramana Suppl., 1, 325 (1975)

A new approach to making large telescope mirrors
Proceedings of ESO Conference on Optical Telescopes of the Future, Geneva, 1977,
ed. F. Pacini et al. ESO., (1978)

Rajaram Nityananda
Impossibility of a continuous phase convention for polarised light
Pramana, 12, 257 (1979)

The Interference of polarised light as an early example of Berry's phase
Curr. Sci., 55, 1225 (1986)

S.N. Karbelkar and Rajaram Nityananda
Atmospheric noise on the bispectrum in optical speckle interferometry
J. Astrophys. Astro., 8, 271 (1987)

Rajaram Nityananda
Comment on Modified photon equation of motion as a test for the principle of equivalence"
Phys. Rev. D., 46, 871 (1992)

Rajaram Nityananda and Joseph Samuel
Fermat's principle in general relativity
Phys. Rev. D., 45, 3862 (1992)

Joseph Samuel and Rajaram Nityananda
Transport along null curves
J. Phys. A: Math. Gen., 33, 2895 (2000)

Condensed Matter Physics

Rajaram Nityananda and S. Ramaseshan
Rotation of neutron polarisation in helical magnetic structures
Solid State Commun., **9**, 1003 (1971)

Rajaram Nityananda, A.S. Reshamwala and A. Jayaraman
Effect of pressure and alloying on the itinerant antiferromagnetic ordering in Cr-Fe alloys
Phys. Rev. Lett., **28**, 1136 (1972)

Rajaram Nityananda
A theory of the critical resistivity of a binary mixture
Proceedings of the Nuclear Physics and Solid State Physics Symposium
Solid State Physics, **18C**, 32 (1975)

Rajaram Nityananda and G.S.Ranganath
Disclinations and their radial force of interaction in elastically anisotropic nematic liquid crystals
Proceedings of the International Conference on Liquid Crystals, Bangalore, 1979,
ed. S.Chandrasekhar, (Heyden 1980), p.205

Rajaram Nityananda and Ramesh Narayan
Simple variational approach to the thermal properties of ionic crystals
Pramana, **19**, 367 (1982)

Suman B.Iyer, Rajaram Nityananda and Vikram Kumar
Applicability of the van der Pauw Hall measurement technique to implanted samples
J. Appl. Phys., **55**, 4450 (1984)

Sriram Ramaswamy, Rajaram Nityananda, V.A. Raghunathan, Jacques Prost
Power-Law Forces between Particles in a Nematic
Mol. Cryst. Liq. Cryst., **288**, 175 (1996)

M.M.G. Krishna, Ranjan Das, N. Periasamy, Rajaram Nityananda
Translational diffusion of fluorescent probes on a sphere: Monte Carlo simulations, theory, and fluorescence anisotropy experiment
J. Chem. Phys., **112**, 8502 (2000)

Crystallography

Ramesh Narayan and Rajaram Nityananda
Crystal structure analysis with the maximum entropy method
Curr. Sci., **50**, 168 (1981)

Ramesh Narayan and Rajaram Nityananda
The maximum determinant method and the maximum entropy method
Acta Cryst., **A38**, 122 (1982)

Ramesh Narayan, Rajaram Nityananda and G.V. Vani
Maximum entropy - A new approach to the crystallographic phase problem
Proc. Ind. Acad. Sci., (Chemical Sciences), **92**, 341 (1983)

Astronomical Image Reconstruction

M.M. Komesaroff, Ramesh Narayan and Rajaram Nityananda
The maximum entropy method of image restoration-properties and limitations
Astron. Astrophys., 93, 269 (1981)

Rajaram Nityananda and Ramesh Narayan
Maximum entropy image reconstruction - A practical non-information -
Theoretic approach
J. Astrophys. and Astron., 3, 419 (1982)

Rajaram Nityananda and Ramesh Narayan
Reconstruction of a polarized brightness distribution by the maximum entropy
method
Astron. Astrophys., 118, 194 (1983)

Rajaram Nityananda and Ramesh Narayan
Maximum entropy - flexibility versus fundamentalism
Proceedings of the IAU/URSI workshop on Measurement and Processing for
Indirect Imaging, Sydney, 1983
ed. J.A. Roberts, (Cambridge University Press, 1984) p.281

Ramesh Narayan and Rajaram Nityananda
Maximum entropy image restoration in astronomy
ed. Geoffrey Burbidge, Annual Reviews Inc.
Ann. Rev. Astron. Astrophys., 24, 127 (1986)

Rajaram Nityananda
Comparing optical and radio - quantum issues (Invited review)
Proceedings of the IAU Symposium #158, on Very High Angular Resolution Imaging, 1993
eds. J.G.Roberston and W.J.Tango, (Reidel, 1994) p.11-18

Sanjay Bhatnagar and R. Nityananda
Solving for closure errors due to polarization leakage in radio interferometry
of unpolarized sources
A&A., 375, 344B (2001)

Astronomy and Astrophysics

Rajaram Nityananda and Ramesh Narayan
Validity of the quasistatic approximation in the theory of black hole evaporation
Phys. Lett., 82A, 1 (1981)

Rajaram Nityananda and Ramesh Narayan
Luminosity limits for funnels in thick accretion discs
Mon. Not. Roy. Astr. Soc., 201, 697 (1982)

Ramesh Narayan, Rajaram Nityananda and Paul J. Wiita
The luminosity of particle beams from thick accretion discs
Mon. Not. Roy. Astr. Soc., 205, 1103 (1983)

Rajaram Nityananda and J.P. Ostriker
Gravitational lensing by stars in a galaxy halo: Theory of combined weak and strong scattering J. Astrophys. Astr., 5, 235 (1984)

Ramesh Narayan, Roger Blandford and Rajaram Nityananda
Multiple imaging of quasars by galaxies and clusters
Nature, 310, 112 (1984)

Rajaram Nityananda and Ramesh Narayan
The relevance of the Eddington limit to thick accretion discs
Proceedings of the IAU/COSPAR Meeting on Advances in High Energy Astrophysics and Cosmology, Rogen, Bulgaria
Adv. Space Res., 3, 319 (1984)

Ramesh Narayan and Rajaram Nityananda
Gravitational lenses - The multiple scattering limit
Proceedings of the Winter School on Energetic Extragalactic Sources, Bangalore, 1983, ed. V.K. Kapahi, (Indian Academy of Sciences, 1985) p.149

Rajaram Nityananda and Ramesh Narayan
Thick accretion discs - Luminosity limits and mass outflow
Proceedings of the Winter School on Energetic Extragalactic Sources, Bangalore, 1983, ed. V.K. Kapahi, (Indian Academy of Sciences, 1985) p.127

Rajaram Nityananda
Speckle interferometry and the mystery spot
Kodaikanal Observatory Bulletin, 10, 55 (1988) (Review)

S. Sridhar and Rajaram Nityananda
Undamped oscillations of collision less stellar system: Spheres, spheroids and discs J. Astrophys. Astr., 10, 279 (1989)

A rapidly rotating cluster
Proceedings of the International Conference on Gravitation and Cosmology, Goa (1987), Highlights in gravitation and cosmology, ed. B.R.Iyer, et al. (Cambridge Univ. Press, 1988) p.348

A.A. Deshpande and Rajaram Nityananda
Statistics of refractive pulsar scintillation: effects of limited data length
J. Astro. Astrophys., 231, 199 (1990)

Rajaram Nityananda
Gravitational lenses
Proceedings of the Raman Centenary Symposium on Waves and Symmetry, Bangalore, 1988,
Curr. Sic., 59, 1044 (1990) (Invited review)

Rajaram Nityananda
Pictures of gravitational lensing
Proceedings of the workshop on Gravitational Lenses, Toulouse 1989, ed. Y. Mellier, (Springer 1990) (Invited review)

S. Sridhar and Rajaram Nityananda
Time dependent dynamics of a planar galaxy model
Mon. Not. Roy. Astr. Soc., 245, 713 (1990)

S. Sridhar and Rajaram Nityananda
Dynamics of the Antonov-Nuritdinov planar galaxy model
Proceedings of the IAU Colloquium No.136 on chaos and instability in celestial mechanics and stellar dynamics, New Delhi 1990, ed. K. B. Bhatnagar

Rajaram Nityananda
Oorts review of stellar dynamics
Curr. Sci., 65, 144 (1993) (Invited review)

Rajaram Nityananda and T. Padmanabhan
Scaling properties of non-linear gravitational clustering
Mon. Not. R. Astron. Soc., 271, 976 (1994)

Rajaram Nityananda
Collisionless relaxation of dark matter
Proceedings of the International Conference on Non-Accelerator Particle Physics, Bangalore 1994, Ed. R. Cowsik (World Scientific 1995)

Mangalam, A.; Nityananda, R.; Sridhar, S.
Constrained Violent Relaxation to a Spherical Halo
Ap. J. 524, 623 (1999)

N.G. Kantharia, S. Ananthkrishnan, Rajaram Nityananda, Ananda Hota
GMRT Observations of the Group Holmberg 124: Evolution by Tidal Forces and Ram Pressure Astronomy and Astrophysics, 435, 483 2005

Bhaswati Bhattacharya and; Rajaram Nityananda Determination of the orbital parameters of binary pulsars Mon. Not. Roy. Astron. Soc. 387, 273 (2008)

Gregory Paciga, Tzu-Ching Chang, Yashwant Gupta³, Rajaram Nityananda, Julia Odegova, Ue-Li Pen¹, Jeffrey B. Peterson, Jayanta Roy, Kris Sigurdson

The GMRT Epoch of Reionization Experiment: A new upper limit on the neutral hydrogen power spectrum at

$z \approx 8.6$

(submitted to Mon. Not. Roy. Astron. Soc.
<http://arxiv.org/abs/1006.1351>

Technical Reports:

1. Title: Identifying baseline problems from $u=v$ tracks

URL : <http://ncralib1.ncra.tifr.res.in:8080/jspui/handle/2301/432>

(with Dr. Nimisha Kantharia)

2. Title: Identifying and filtering RFI based on its polarised nature

URL : <http://ncralib1.ncra.tifr.res.in:8080/jspui/handle/2301/483>

3. Title: Effects of SVD RFI filtering on a weak signal

URL: <http://ncralib1.ncra.tifr.res.in:8080/jspui/handle/2301/484>

4. Title: Recovering RFI contributions to visibilities between sky pointing antennas from correlations with and between reference antennas

URL: <http://ncralib1.ncra.tifr.res.in:8080/jspui/handle/2301/485>

(all three work with Ue-Li Pen)

5. Title: Towards a pointing model for GMRT antennas - Part II

URL: <http://ncralib1.ncra.tifr.res.in:8080/jspui/handle/2301/436>

(co-authored with Dr. Nimisha Kantharia)