Chakrabarti Sandip K.

Position: Senior Professor

S. N. Bose National Centre for Basic Sciences, Kolkata

And

In Charge, Academic Affairs, Indian Centre for Space Ph.

I Scientific Work

His main research work consists of study of the Astrophysical Flows around black holes. He studies the spectral and temporal properties of black holes, from quasars to nano-quasars. However he is also spending some time on formation and evolution of bio-molecules in star-forming region. He has published about 150 papers in International Refereed journal and a similar number of papers in Proceedings. He has written a book and edited several volumes.

II Conferences and educational activities

Please see my biodata which contains the whole set of activities, including the recent ones.

Please use them and place them where you find suitable.

Work With Students:

Doctorate Students Supervision

Last twelve years he has produced 12 Ph.D. scholars and another 6 students are registered and would submit their thesis soon. Four more students have joined since last year. The students mainly worked on (a) jets and outflows; (b) nucleosynthesis around black holes, (c) Planetary ring dynamics; (d) Quasi-periodic Oscillations of GRS 1915+105; (e) Transonic accretion flows with heating and cooling; (f) gravitational waves emitted from a binary which has an accretion disk also; (g) Multiwavelength studies of SS433; (h) Spectral properties of accretion disks having shock waves; (i) Formation of simple bio-molecules during star formation; (j) Grain chemistry using Monte-Carlo simulations etc.

Many of his students have permanent positions in national institutions.

Other Teaching Duties: Generally he takes courses on high energy astrophysics at S.N. Bose Centre and R.K.M. College (autonomous MSc in Astrophysics).

Work With Postdocs: he has several colleagues including post-docs.

III Service activities

Within ICRANet :

(a) he organized a workshop on Black Holes, Neutron Stars and Gamma Ray Bursts as a satellite meeting (Feb 15^{th}-17^{th}, 2008) just after the Observational Evidence for Black Holes in the Universe conference (Feb 10^{th} -15^{th}, 2008). These are done in collaboration with ICRAnet. A large number of delegates from ICRAnet came to India and the meeting was a grand success. A conference proceedings is already published by AIP (New York) on works presented in the conference and the ICRANET-S.N. Bose Centre joint workshop.

(b) Presented a seminar on the "Physics and Astrophysics of the Boundary Layer of a Black Hole: The Shocking Theory" at the University of Rome, Oct. 29^{th}, 2007.

(c) Presented a seminar on the "Formation of Bio-Molecules during star formation" at ICRANET Pescara, on Sept. 1^{st}, 2008.

IV 2007-2008 list of Publications

Time dependent chemical evolution of molecular clouds, 2006, by Ankan Das, Sandip K. Chakrabarti, Kinsuk Acharyya, Sonali Chakrabarti, In Book of Abstract:Complex molecules in space and the Present status and prospects with ALMA, p.59

Methanol Formation: AMonte Carlo Study, 2008, Ankan Das, Kinsuk Acharyya, Sonali Chakrabarti,
Sandip K. Chakrabarti, International Astronomical Union, 251, 2132

Formation of Water and Methanol in Star Forming Molecular Clouds, Sonali Chakrabarti, Ankan
Das, Kinsuk Acharyya and Sandip K. Chakrabarti, 2008, Origin of Life and Evolution of Biosphere, (in press).

Santabrata Das and Sandip K. Chakrabarti, 2007, Properties of accretion shock waves in viscous flows with cooling effects, Proc. Marcel Grossman Meeting, Ed. R. Ruffini et al. (World Scientific).

Samir Mandal and Sandip K. Chakrabarti, 2007, Spectral and timing properties of magnetized advective flows with standing shocks, Proc. Marcel Grossman Meeting, Ed. R. Ruffini et al. (World Scientific).
Ankan Das, Sandip K. Chakrabarti, P. BASU, S. MONDAL, S.K. CHAKRABARTI, 2007, Gravitational wave emissionfrom a stellar companion black hole in presence of an

accretion disk around a Kerrblack hole, Proc. Marcel Grossman Meeting, Ed. R. Ruffini et al. (World Scientific)

P. BASU, S.K. CHAKRABARTI, 2007, Gravitational wave damping from a self gravitating vibrating ring of matter around a black hole, Proc. Marcel Grossman Meeting, Ed. R. Ruffini et al. (World Scientific)

S. K. CHAKRABARTI, H. GHOSH and D. SOM, 2007, Astrophysical black holes do they have boundary layers?, Proc. Marcel Grossman Meeting, Ed. R. Ruffini et al. (World Scientific)

S. K. Chakrabarti, D. Debnath, P.S. Pal, A. Nandi, R. Sarkar, M.M. Samanta, P.J. Wiita, H. Ghosh and D. Som, 2007, Quasi periodic oscillations due to axisymmetric and non-axisymmetric shock oscillations in black hole accretion, Proc. Marcel Grossman Meeting, Ed. R. Ruffini et al. (World Scientific).

Soumen Mondal and Sandip K. Chakrabarti, 2007, Pseudo-Kerr Geometry, Proc. Marcel Grossman Meeting, Ed. R. Ruffini et al. (World Scientific).

Soumen Mondal and Sandip K. Chakrabarti, 2007, Standing Shocks in Pseudo-Kerr Geometry, Proc. Marcel GrossmanMeeting, Ed. R. Ruffini et al. (World Scientific).

Santabrata Das and Sandip K. Chakrabarti, 2007, Parameter space study of magnetohydrodynamic
flows around magnetized compact objects, Proc. Marcel GrossmanMeeting, Ed. R. Ruffini et al. (World Scientific).