

# INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

2A&B, Raja S.C. Mullick Road, Jadavpur, Kolkata-  
700032, India

## Seminar Notice

Org. by

**Theoretical Physics Department**

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| <b>Title:</b>    | <b>Emergent Gravity and topological T-duality</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Speaker:</b>  | <b>Raju Roychowdhury, Institute of Physics, University of Sao Paulo, Brazil</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Date:</b>     | <b>February 7, 2018 (Wednesday)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Time:</b>     | <b>3:00 p.m.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Venue:</b>    | <b>Theoretical Physics Seminar Room (C406), 3rd Floor, Centenary Building, IACS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Abstract:</b> | Darboux theorem and Moser lemma in symplectic geometry are the two essential ingredients of emergent gravity. Generalized geometry naturally provides the framework for such a systematic approach to non-symmetric metric gravity and gives rise to the group of Courant automorphism $\text{Diff}(M) \ltimes \Omega_{\text{closed}}^2(M)$ for the Pontryagin bundle $TM \oplus T^*M$ . As further consequences of generalized geometry and Courant algebroid structure we found the imprints of Dirac structure in emergent gravity. The non-degeneracy and closure of the symplectic 2-form enable us to set up a connection between emergent gravity and Big isotropic structure of Vaisman. Finally we propose a geometric T-dual of emergent gravity implemented between oriented circle bundles and this duality is realized in terms of Gysin sequence in the Cohomology. |

**All are cordially invited to attend the seminar**