



ICTS

INTERNATIONAL
CENTRE *for*
THEORETICAL
SCIENCES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS String Seminar

- Title** : On lattice axial symmetries
- Speaker** : Shu-Heng Shao (Massachusetts Institute of Technology, USA)
- Date** : Thursday, 10 October 2024
- Time** : 6:00 PM (IST)
- Abstract** : Can we regularize the chiral global symmetry and its anomaly on a lattice with a finite dimensional Hilbert space? We discuss how the vector and axial $U(1)$ symmetries of a massless Dirac fermion in 1+1d are realized in a Hamiltonian lattice model. Interestingly, these two lattice charges do not commute and form an infinite dimensional algebra, which is consistent with the Nielsen-Ninomiya theorem. After bosonization, this leads to the exact momentum and winding $U(1)$ global symmetries in the lattice XY model.
- Venue** : Online
Zoom Link: <https://icts-res-in.zoom.us/j/95573366829?pwd=dhJipK4SOLGdPXJF8Oib9pvbnzTdWU.1>
Meeting ID: 955 7336 6829
Passcode: 146328