



**TIFR Centre for Interdisciplinary Sciences,  
Narsingi, Hyderabad 500075**

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## **Seminar**

**The Phase Coherent State of Oriented Active Fluids**

**Sebastian Fürthauer**

**TCIS, Hyderabad**

We present a theory for self-driven fluids, such as motorized cytoskeletal extracts or microbial suspensions, that takes into account the underlying periodic duty cycle carried by the active particles of which the system is composed. We show that the fluid can enter a state in which the constituent elements synchronize their phases. This spontaneous breaking of time-translation invariance gives rise to flow instabilities distinct from those arising in phase-incoherent active matter.

***Tuesday, Sep 17<sup>th</sup> 2013***

***11:30 AM (Tea/Coffee at 11:15 AM)***

***Conference Hall, TCIS***