

**TATA INSTITUTE OF FUNDAMENTAL RESEARCH**  
***DEPARTMENT OF ASTRONOMY & ASTROPHYSICS***

Speaker : Dr. Resmi Lekshmi  
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Title : Tale of a Counter Jet

Day, Date & Time : Tuesday, 28 July, 2009 at 14.30 hrs

Venue : Lecture Room (AG-80)

***Abstract***

*The blast-wave from a Gamma Ray Burst travels in velocities close to that of light. What comes naturally from this extreme speed is a heavy doppler boost. If we are to believe the usual picture of the collapsing star producing two jets on opposite directions, emission from the one directed away from the observer gets quenched due to the de-boost and becomes insignificant against the bright forward jet. However, the "counter jet" emerges in the afterglow, as the fireball progressively decelerates and attains a non-relativistic speed.*

*Unfortunately, in most cases, the afterglow would become too faint in the non-relativistic phase and the detection of the counter jet is nearly impossible. Recently, for GRB030329, late observations in low radio frequencies from the GMRT have shown excess flux, expected from the receding jet. Unprecedented opportunities to estimate the structure of the explosion also emerge from these observations.*

*In this talk, I will brief our theoretical predictions of the evolution of the receding jet, and also will present the model fits for GMRT observations.*