Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad – 500 046

Webinar

Investigation of Supercontinuum Generation in Fused Silica

Shraddha

TIFR, Hyderabad

This project presents a numerical framework for studying femtosecond laser interactions with dielectric media, incorporating both nonlinear and linear optical effects. The free-electron density is calculated using Keldysh photoionisation and avalanche ionisation, and is included in a nonlinear source term that also accounts for Kerr nonlinearity. Fourier–Hankel transforms enable accurate coupling between space–time and spectral domains, while material dispersion and diffraction are treated in the ω–k⊥ space. The model provides a foundation for complete spatiotemporal simulations, enabling full-field propagation and resulting in broadband supercontinuum generation.

Monday, Sep 22nd 2025

14:30 Hrs