

Fizički odsjek, PMF, Sveučilište u Zagrebu
Bijenička cesta 32

Seminar Fizičkog odsjeka

Time (s.t.)	Place
Tuesday, 22 nd March 2016, 11:00h	room F201

Jets powered by tidal disruption of stars by black holes

Petar Mimica

Department of Astronomy and Astrophysics
University of Valencia, Spain

The non-thermal transient Swift J1644+57 is thought to be caused by a jet powered by a tidal disruption event (TDE). The early time emission can be explained in a manner similar to a gamma-ray burst afterglow. An open mystery is the origin of the late-time radio re-brightening.

We model the J1644 radio emission by assuming it is produced by a relativistic jet powered by the accretion of a tidally-disrupted star onto a super-massive black hole. We perform multi-dimensional hydrodynamic simulations coupled to a self-consistent radiative transfer calculation to study the synchrotron radio emission.

Once the best-fit model for the Swift J1644 event is presented, we use it to discuss the implications of the TDE jet radio emission the upcoming wide-field radio surveys. We also comment on the prospects for resolving the jet structure with long baseline interferometry, as well as on the possibility of determining the properties of the galactic gas close to the supermassive black hole.

Voditelji seminara FO
Damir Pajić i Ivica Smolić