Contribution ID: **28** Type: **not specified**

High redshift supernova rates measured with a gravitational telescope

Monday 21 September 2015 18:05 (20 minutes)

Supernovae (SNe) are one the most energetic phenomena in the Universe and have been extensively used for astrophysical and cosmological applications. For example, type Ia SNe as distance indicators tools have revealed the accelerating expansion of the universe, while core-collapse (CC) being directly related to the death of massive stars, they trace the star formation history. One of the challenges of SN research is the measurements of the SN rates, particularly at high-z where not many measurements exist. Possible approach to this problem is to use the magnification power of gravitational telescopes such as galaxy clusters. I will present our ground based near-infrared/optical search for gravitationally magnified supernovae behind the galaxy cluster A1689. Our search resulted in the discovery of five highly magnified candidates at high-z classified as CC SNe. We measure the first volumetric CC SN rates in the redshift bins 0.6<z<1.2 and 1.2<z<1.8 and add the first upper limit on the CC SN rate in the range 1.8 < z < 2.4. We attempt to compare the CC SN rate with the cosmic star formation rate.

Author: PETRUSHEVSKA, Tanja (OKC)

Presenter: PETRUSHEVSKA, Tanja (OKC)

Session Classification: Supernovæ