Contribution ID: **79** Type: **not specified**

Searching for pulsars with Einstein@Home

Thursday 27 March 2014 15:30 (15 minutes)

The distributed computing project Einstein@Home searches for unknown pulsars in large data sets. So far, more than 350,000 volunteers from the world-wide public have signed up their computers to run scientific analyses with their spare cycles, reaching a teraflop peak performance. Einstein@Home was originally created to search for continuous gravitational waves (GWs), but is now also analysing radio and gamma ray data.
The latest published Einstein@Home analysis of 2005-2007 data from the interferometric GW observatory LIGO has returned the most stringent all-sky upper limits on GW emission from isolated neutron stars. While LIGO is being upgraded, analysis of the 2009-2010 data set is still ongoing. An Einstein@Home all-sky search is currently in the post-processing stage, while a directed search for the supernova remnant Cassiopeia A is running on the volunteer computers. An Einstein@Home all-sky search is also envisaged as a flagship analysis for the Advanced LIGO era.
Meanwhile, analyses of electromagnetic data have already been successful at discovering previously unknown pulsars, with 48 found in radio data from Arecibo and Parkes and another 4 in gamma ray data from the Fermi space telescope.

Author: KEITEL, David (Albert Einstein Institute)

Presenter: KEITEL, David (Albert Einstein Institute)

Session Classification: Afternoon session - Parallel B