

Observation of the LIGO/Virgo GW190425 by SPI-ACS/INTEGRAL

Monday, April 12, 2021 6:00 PM (15 minutes)

Observations of the gravitational-wave event GW190425 registered by the LIGO/Virgo detectors with the Anti-Coincidence Shield (ACS) of the gamma-ray spectrometer SPI aboard the INTEGRAL observatory are presented. This is only the second event of binary neutron star merging type (> 99% probability) after GW170817. A weak gamma-ray burst, GRB190425, consisting of two pulses in 0.5 and 5.9 s after merging was detected by SPI-ACS. The pulses had a priori reliability of 3.5 sigma and 4.4 sigma as single events and 5.5 sigma as a combined event. Analysis of the SPI-ACS count rate as a test recording has shown that the rate of the appearance of two close pulses with characteristics of GRB190425 by chance does not exceed $6.4 \times 10^{-5} \text{ s}^{-1}$. We note that the time profile of GRB190425 has a lot in common with the profile of the gamma-ray burst GRB170817A accompanying the GW170817 event. We present details of the INTEGRAL observations and comparison of properties of GRB190425 and GRB170817A.

Primary author: POZANENKO, Alexei

Presenter: POZANENKO, Alexei

Session Classification: Gravitational Waves and Gamma-ray Bursts

Track Classification: Gravitational Waves