

GRB170817A and the subpopulation of nearby low luminous short Gamma Ray Burst

Karelle Siellez

Georgia Institute of Technology

ABSTRACT: The Neutron Star merger observed simultaneously with an electromagnetic emission through the short Gamma Ray Burst [GRB] GRB170817A followed by a kilonova and detected thanks to advanced LIGO and Virgo with their Gravitational Wave [GW] emission GW170817, have wide opened the multi-messenger era in Astrophysics.

After reviewing this amazing discovery, I will show the existence of a new subpopulation of short GRB low luminous at low redshift that could give us more coincidence with GW in the next run of advanced LIGO and Virgo. I will discuss the new rate of expected coalescences, and the properties of the progenitors that are supposed to produce those GRBs. I will then present the different method used to achieve this goal, and especially the one that I developed with the GBM Fermi team, using subthreshold untargeted GRBs as trigger to find GW in coincidence.