Contribution ID: **85** Type: **Invited talk in a parallel session**

Deciphering the distance and the nature of GRB 210704A

Tuesday, 9 July 2024 17:22 (22 minutes)

GRB 210704A is a burst of intermediate duration (T90~1-4 s) followed by a fading afterglow and an optical excess that peaked about 7 days after the explosion. Its properties, and in particular those of the excess, do not easily fit into the well established classification scheme of GRBs as being long or short.

In this talk, I will present multi-wavelength observations of the GRB and its counterpart, observed up to 160 days after the burst. I also present three possible scenarios to explain our multi-frequency observations and considering the diverse estimated distance values: a neutron star merger, a collapsing massive star, and an atypical explosion possibly hosted in a cluster of galaxies. We find that traditional kilonova and supernova models do not match well the properties of the optical excess, leaving us with the intriguing suggestion that this event was an exotic high-energy merger.

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Session Classification: GRB-SN connection

Track Classification: Gamma-Ray Bursts (GB): GRB-SN connection