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A multi-zone scenario for the non-thermal emission of NGC1068

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The IceCube telescope found an excess of 79 neutrinos at Tera-electron-volt energies correlated with the galaxy NCG1068 (the corresponding significance is 4.2 sigmas), making this Seyfert galaxy spatially coincident with the hottest spot in the northern high-energy neutrino sky.

Considering that NGC1068 presents a core with a high star-formation rate and hosts an active galactic nucleus, these observations can be the result of different astrophysical components.

In a recent work the ALMA collaboration highlights the emission from a kiloparsec jet associated to this AGN identifying 4 major knots.

In this contribution we explore a multi-messenger scenario, modeling the different astrophysical components through the available electromagnetic observations. The total expected neutrino emission is then compared with the IceCube observations and interesting perspectives for the future Global Neutrino Network are shown.

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