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High-Energy Neutrinos from NGC 1068

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IceCube has observed an excess of neutrino events over expectations from the isotropic background from the direction of NGC 1068. The excess is inconsistent with background expectations at the level of 2.9σ after accounting for statitsical trials. Even though the excess is not statistical significant yet, it is interesting to entertain the possibility that it corresponds to a real signal. Assuming a single power-law spectrum, the IceCube Collaboration has reported a best-fit flux ~ 3 × 10^{−11} (E/TeV)^{−3.2} (TeV cm^2 s)^{−1} , where E is the neutrino energy. Taking account of new physics and astronomy developments we give a revised high-energy neutrino flux for the Stecker-Done-Salamon-Sommers AGN core model and show that it can accommodate IceCube observations.

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AGN as neutrino sources

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