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Particle acceleration and high energy emission in the white dwarf binaries AE Aquarii and AR Sco

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In this presentation the white dwarf close binaries AE Aquarii and AR Sco are investigated to search for signatures of particle acceleration and associated non-thermal emission. A detailed investigation of the total Fermi-LAT data base reveal signatures of pulsed gamma-ray emission in AE Aquarii, which mimics earlier reports of transient burst-like pulsed TeV gamma-ray emission reported from this system in the 1990's. Although a similar analysis of the Fermi-LAT data of AR Sco does not reveal strong signatures of pulsed emission, our analysis allowed constraining the gamma-ray activity from this system. Recent MeerKAT radio data from both these systems clearly reveal pulsar-like non-thermal emission, which clearly indicates that both these fascinating systems contain a strong particle accelerator of some sort.

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