

The first radio-quiet millisecond pulsar?

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Abstract. The Fermi-LAT source 2FGL J2339.6-0532 is likely to host a millisecond pulsar in a 'black-widow' system. Strong indications of its nature come from gamma rays and particularly from optical and X-ray observations. However, no pulsations have been found so far neither in radio nor in gamma rays, despite deep searches. I will present here our efforts to find pulsations in Fermi-LAT data. I will describe the uncertainties in the orbital and spin parameters of the source, broadly covered in our search. I will prove the robustness of our technique on other similar systems, and through simulations. I will present the results of our search: the most likely candidates and the further constraints on the parameters of the putative pulsar. Finally, I will discuss the implications of our results and the prospects to find pulsations in this and other similar systems in the future.
