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Advantages of the Inclusion of Globular Cluster Millisecond Pulsars in Pulsar Timing Arrays

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Even if, at the moment, globular cluster (GC) millisecond pulsars (MSPs) cannot be timed with an extremely high precision, mainly due to the effects induced on the MSPs dynamics by the GC gravitational potential, we expect that the situation will change in the near future thanks to new powerful detectors, like the Square Kilometre Array (SKA). Therefore, we suggest the possibility of including GC MSPs in Pulsar Timing Arrays (PTA), discussing what are the advantages for the detection of ultra-low frequency gravitational waves (GWs). We explain how this can support the current research on continuous GWs, based on searching quadrupolar correlation in the MSPs timing residuals.

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