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Pulsar timing detection of gravitational waves from supermassive black hole binaries in stellar environment

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We study the effect of stellar environment on gravitational wave spectrum produced by supermassive black hole binaries (SBHB). Our model includes the possibility of rotating galactic nucleus, which opens a new degree of freedom - the orientation of SBHB's orbital plane - and significantly affects its eccentricity evolution. The result of our work is a model spectrum of stochastic gravitational wave background which can be tested by pulsar timing array observations.

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