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Origin of eclipsing time variations in post-common-envelope binaries

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Eclipsing time variations in post-common-envelope binaries can be interpreted to be due to the presence of a third body (light-travel time effect) or to be a result of stellar magnetism, leading to the presence of a time-dependent quadrupole moment in the star causing time-dependent variations in the orbit period. In this talk, I will present 3D magneto-hydrodynamical simulations of stellar dynamos and their effect on the stellar interior, giving rise to a time-dependent quadrupole moment. I will further then present numerical simulations of post-common-envelope binaries with such a time-dependent quadrupole moment to show how these can produce the observed O-C diagrams.

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