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Possible misunderstandings with different Poincare sections in a kicked rotor¹ JUN DAI, DA-REN HE, Yangzhou University — In previous studies on kicked rotors, Poincare sections often were chosen by collecting the angular momentum and angular position values of the moving particle just before the kicks. By an example system, where the kicking periods are different in the upper or lower semicircle, we show that such a traditional Poincare section may lead to incorrect dynamical behavior due to the fact that one put phase points in different times onto same phase plane. In such kind of systems the suitable Poincare section may be constructed by the angular momentum (or angular position) and time step values of the moving particle just before the kicks. Such a Poincare section should absolutely avoid the possibility for putting phase points in different times onto same phase plane. We show numerically that such a Poincare section can avoid all the abovementioned mistakes.

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