

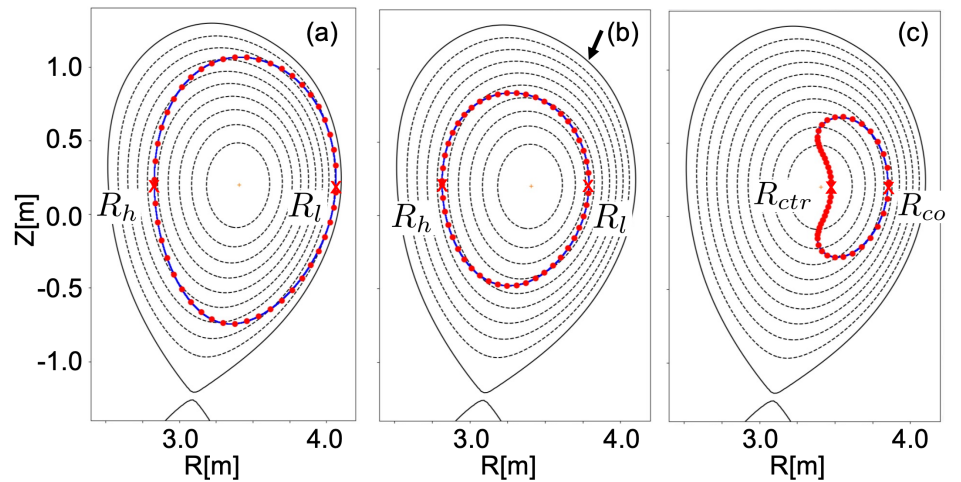
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## Commentary

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The evaluation of orbits is important for calculating plasma heating and current drive by fast ions. The straightforward method is to trace an orbit (blue lines in the figure), but this takes a long time to calculate. We utilize an analytical formula that can be used in axisymmetric configurations (red markers). The orbit by the formula is accurate enough for evaluating heating and current drive for both passing (a and b) and trapped (c) particles. The calculation time is also reduced to about 1/100. Taking advantage of this, we have sped up the code which uses the Monte Carlo method.

(Kouji SHINOHARA *et al.*, Plasma and Fusion Research, Vol. 20, 1403017 (2025) <https://www.jspf.or.jp/>)