Abstract Submitted
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Modelling of full toroidal plasma response to externally applied nonaxisymmetric magnetic perturbation fields in EAST[1] W. GUO, ASIPP, Y. LIU, UKAEA, Q. REN, Y. SUN, G. LIU, C. PAN, ASIPP, L.L. LAO, GA — Since the increasing importance of Resonant Magnetic Perturbations (RMPs) for tokamak plasmas, it is planned to install the external coils in EAST to facilitate the related physics investigations. Predictive modelling of plasma response is under way by using MHD code MARS-F. It is in the framework of linear single-fluid, resistive MHD approximation and full toroidal geometry. It allows us to study the linear response of plasma to RMP fields with fixed plasma rotation. Full toroidal coupling enables us to study both the response of the nonresonant and resonant harmonics. A systematic study of various plasma conditions (resistivity, rotation, pressure) and coil configurations (midplane coils, off midplane coils, various toroidal mode numbers) on the plasma response to the nonaxisymmetric fields produced by the RMP coils, based on MARS-F full toroidal computations, is ongoing. Response from plasma based on different models (vacuum, ideal, resistive) will be presented.

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