## Internal Kink Stabilisation and the Properties of Auxiliary Heated Ions and Alpha Particles

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It is well known that the stabilising effect of alpha particles is expected to extend the sawtooth period of ITER up to the order of the resistive diffusion time [1]. A pertinent question to ask is to what extent the stabilising effects of auxiliary heated minority ions of existing tokamaks can represent the role of alpha particles. Addressing this problem requires evaluation of the stability of the internal kink mode taking into account toroidal plasma rotation [2], anisotropy [3] and energetic ion velocity asymmetry [4]. Such effects are relevant to auxiliary heated ion stabilisation, but are not fundamentally important to alpha particle stabilisation. Finite orbit effects [5] however significantly modify the response of both auxiliary heated ions and alpha particles. This paper will address these issues upon consideration of the adiabatic and non-adiabatic fast ion response to the internal kink mode with the relevant effects included.

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## References

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