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Tearing modes of the type of toroidal Alfvén eigenmodes[1] LINJIN ZHENG, M. T. KOSCHENREUTHER, Institute for Fusion Studies, The University of Texas at Austin — The coupling of micro-tearing modes and Alfvén modes is investigated. It is found that the electron inertia and finite resistivity may lead to the excitation of tearing modes of the type of toroidal Alfvén eigenmodes even in the Alfvén continuum. Or in other words, a new branch of toroidal Alfvén eigenmodes can possibly appear when the electron inertia and finite resistivity are taken into account. The modes result from the coupling of two counter-propagating waves of TAE type and, nevertheless, the perturbed radial magnetic field is excited at the rational surfaces. This leads the reconnections to occur at the rational surfaces. This may offer an alternative explanation for the experimental observations of enhanced radial transport when the TAE type of modes prevails.

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