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**Analytic Modeling of Interaction Between Resonant Toroidal Magnetic Field Lines**<sup>1</sup> B.I. RAPOPORT, Harvard U., T.E. EVANS, General Atomics, R.K.W. ROEDER, Cornell U. — We present a description of coupling between resonant magnetic field lines, in a toroidal magnetic field. We explore a mechanism by which neighboring or harmonic magnetic islands expand, and eventually make contact along a separatrix, allowing previously independent field lines to interact. Using a Hamiltonian formulation of the magnetic field line equations to model such systems analytically, we characterize the spatial trajectories and interactive behavior of field lines coupled through this mechanism.

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- Prefer Oral Session  
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