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PIES LHD Magnetic Field Reconstruction SAMUEL LAZERSON,
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Physics Laboratory — Reconstructions of the magnetic fields in the Large Heli-
cal Device (LHD) by the Princeton Iterative Equilibrium Solver (PIES) code are
presented. The pressure profile for the device is experimentally determined from
Thomson scattering. Magnetic diagnostics provide magnetic field constraints. Ini-
tial conditions are provided by the Variational Moments Equilibrium Code (VMEC).
The pies code is then utilized to study magnetic island formation and stochastic re-
gions in the stellarator. Mechanisms for flux surface breakup in stellarators are
investigated. These results provide additional benchmarks for comparisons to other
equilibrium codes (such as HINT2).

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