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Evolution of Electron Temperature and Coupling between Electron Temperature and Power Absorption HYO-CHANG LEE, SEUNGJU OH, YOUNG-CHEOL KIM, CHIN-WOOK CHUNG, Department of Electrical Engineering, Hanyang University, Seoul 133-791, Korea — Power absorption to plasma is a fundamental and core issue in the field of ionized gases and plasma physics, and it is generally known that in the thermal equilibrium plasma with Maxwellian electron distribution, the power absorption in global model is decoupled to electron temperature (T_e). However, we show experimentally and theoretically that T_e is quite coupled to the power absorption. With increase in the power absorption to the plasma, the power absorption and the T_e are abnormally evolved due to a competition between the step-ionizations and the gas heating.

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