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Electrical characteristics and plasma parameters during E H mode transition in an inductively coupled plasma JUN-HYEON MOON, HO-JUN MOON, CHIN-WOOK CHUNG, Hanyang university — The phenomena that the antenna coil current is decreased after the E H mode transition is investigated in a cylindrical inductively coupled plasma. When the E H mode transition is occurred in certain discharge conditions such as low driving frequency and high pressure, the decrease of antenna coil current and voltage are observed. This phenomenon has explained by negative differential impedance. For this phenomenon to be possible, the slope of absorbed power to the plasma must be lower than the slope of transferred power. In this work, the calculation of transferred power and absorbed power is used to explain the decrease of antenna coil current. The density jump after E H mode transition is also explained by the transferred power and dissipated power.

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