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Radiation effect and relaxation layer in electro-magnetically driven strong shock waves¹ KOTARO KONDO, MITSUO NAKAJIMA, TOHRU KAWAMURA, KAZUHIKO HORIOKA, Tokyo Institute of Technology — Strong shock waves play a crucial role in many astrophysical phenomena. Ion-electron relaxation process and radiation affect the structure of strong shock waves. Since the non-linear nature of the relaxation process makes the plasma behavior extremely complicated, it requires well-defined shock wave formation to estimate the structure. We investigate electro-magnetically driven shock in laboratory experiments. The pulse power device with tapered electrodes can generate a quasi steady and 1-D shock [1], which allows for analysis of ion-electron relaxation and radiation processes. We will show results of electron temperature measurement by a line pair method and radiative cooling, which restricts the increase of electron temperature.

[1] K. Kondo, M. Nakajima, T. Kawamura and K. Horioka, *Rev. Sci. Instr.* **77**, 036104 (2006).

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