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A new method for measuring pulsed plasma with high-time resolution based on floating harmonic method YU-SIN KIM, CHIN-WOOK CHUNG, Hanyang University, Republic Korea — A new method in high time resolution of up to 1?sec was proposed in this study to measure plasma density and electron temperature in pulsed plasma. The basic principle of the floating harmonic method is to use the current obtained by applying a sinusoidal voltage to the plasma [1]. The new method is to use boxcar mode method and phase-shifted sinusoidal voltage at regular intervals. When the trigger signal of pulse modulated power source is put in the sinusoidal voltage is applied to plasma. The phase of sinusoidal voltage shifts at regular interval until one cycle of sinusoidal current is obtained at the each time point of micro second. The method can measure plasma parameters in units of 1?sec and the measured results were compared to conventional single Langmuir probe method.

[1] M. H. Lee, S. H. Jang, and C. W. Chung, J. Appl. Phys. 101, 033305 (2007)

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