Low frequency oscillations (LFOs) have been obtained in a 3D time domain simulation for the first time. From our preliminary simulation studies, it is found that not only magnetic compression profile but initial velocity or velocity ratio play an important role in the operation of a MIG electron gun. In addition, the secondary emission effects on the LFOs are also studied. The frequency of LFOs has been estimated by a periodic asymmetric oscillator model, close to the experimental values.


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