**Clippers ESTER Metrology Results**

P.BERTELLI1,

*1 CEA-DAM, Bruyères-Le-Châtel, FRANCE*

The LASER MEGA JOULE (LMJ) is a high power laser facility used and operated by the CEA. Located in the south of France, this facility provide an extrordinary instrument to study High Energy Density physics.

The experimental LMJ require the installation of several hundred measurement channels connected to high bandwidth digitizers whose inputs channel are regularly damaged by high amplitude parasitic pulses circulating in the facilty The ESTER Limiters (Limiteurs Electronique de Surtensions Transitoires Electriques Rapides Electronic Clippers Fast Transient Electric Surge), presented in this article, are the result of studies carried out by CEA teams for several years. In 2022, they made it possible to design and provide, a reliable and robust solution to ensure the protection of digitizer inputs (protection function) while ensuring the integrity of high-frequency experimental signals (integrity function). This article aims at presenting the technology used and afterwards at providing the results obtained that are related to the protection function for two transient pulse shapes (Amplitude: 600V/LMH: 200 ns; Amplitude: 1 kV/LMH: 6 ns). The integrity function is also addressed. The results show that the ESTER Limiters ensure the passage of 3 GHz HF signals without degradation in an amplitude range between -8 and +8V. Several tests on long experimental links (10, 20, 30 and 40 meters), typical of LMJ coaxial links used, are also presented. The results show that after appropriate digital processing, the original signal is perfectly reconstructed, without distortion, even in the presence of limiters. All the metrological results are presented on a sample of 20 limiters in order to check the homogeneity of the characteristics and the absence of manufacturing default processing.