**Characterization of ultrafast cameras for the Plasma Diagnostics of the Laser Megajoule**

T. Chirac1, D. Gontier1, A. Quesnel1, R. Lebrun1, E. Vinkler1

*1 CEA, DAM, DIF, F-91297 Arpajon France*

The Laser MegaJoule (LMJ) facility near Bordeaux in France is designed to study high-energy-density physics. Plasma diagnostics surrounding the implosion chamber are designed to quantitatively measure the evolution of the target during the experiment. X-ray spectrometers, optical & x-ray imagers or VISAR require ultra-fast cameras. For each family, framing cameras and streak cameras are available. We provide an overview of the current performances of these cameras and the ongoing work to improve and harden them.

Four types of ultra-fast cameras are currently operated at LMJ: framing and streak camera for X-ray diagnostics and gated optical imager and streak camera for optical diagnostics. Each one of them is routinely calibrated to provide LMJ physicists with accurate results. Here, we present the approaches we have to dealing with artifacts and improving the performances of the ultrafast cameras thanks to their fine characterization.