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Damaging of Debris Shield Exposed during Laser Matter Experiments on the Lil Facility DIDIER RAFFESTIN, JEAN LUC RULLIER, LAURENT LAMAIGNERE, SEVERINE GARCIA, CEA/DAM/Cesta, STEPHANIE PALMIER, ALESSANDRA CIAPPONI, JEAN YVES NAPOLI, Institut Fresnel — During plasma experiments on high energy laser facility, debris and fragments originating from the target can be responsible for significant damages on optics or equipments. On the LIL facility (the Laser Integration Line, prototype of the LMJ (MegaJoule Laser)), valuable optics are protected using debris shield. This device is exposed to both materials (including radiations) stemming from the target and high intensity laser getting through. In the scope of the maintenance programme of the future LMJ (holding, up to 240 debris shields), it is necessary to quantify the expected evolutions of the shield (aka “LAE”: lame anti éclat) with respect to the experimental conditions. For this purpose, two programmes were established. On one hand, the periodic measurement of real LIL LAE exposed, in term of observation (size, number of damage) and 3ω laser transmission. And on the other hand, the exposition of representative samples in the target chamber in order to determine the direct effect of the target (droplets, shrapnels, debris, ...) and the consequent sensibility to representative laser irradiation. Intermediate results of these two approaches are further discussed in this paper.

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