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Analysis of temperature measurement at lead/LiF interface under shock compression. GREGORY ROBERT, FABRICE GILLOT, JACKY BENIER, CEA/DAM/DIF, F-91297 Arpajon Cedex — Determining temperature in shock physics experiments is of paramount importance to constrain equations of state and related models. In such experiments, a multi-wavelength pyrometer is usually used to detect radiance emitted by a metallic surface glued on a transparent window. If temporal evolution of the radiance is connected to the instantaneous temperature of the metallic surface by Planck's law, some corrections must be taken into account to remove undesirable noise (emission/absorption from glue/windows, interface effects, hot spots, fractoluminescence, ...). Here, we proposed to analyze different radiance signals emitted by a lead surface glued on a lithium fluoride (LiF) window in experiments where P_{shock} is around tens GPa and to estimate corrective terms to be applied on these data to improve the precision of the determination of the "true" temperature of the metallic surface.

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