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Effect of the liquid/solid friction on the drop impact dynamics CHRISTOPHE PIRAT, HENRI LASTAKOWSKI, ANNE-LAURE BIANCE, CHRISTOPHE YBERT, LPMC CN UCBL UNIV. LYON 1, LIQUID AT INTERFACES TEAM — In this experimental study, the problem of drop impact on a smooth solid surface is investigated, both in wetting and non-wetting configurations. The combination of high speed Particle Image Velocimetry and absorption method allows us to probe the flow in the lamella during an impact. The role played by the solid/liquid friction in the sheet spreading is clarified by comparing impacts in low friction (above the Leidenfrost temperature) and partial wetting (on a cold substrate). In the latter case, the results show that the lamella reaches a thickness limited by the development of a viscous boundary layer, in very good agreement with recent theoretical and numerical results. The boundary layer is not observed in the low friction case.

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