

Abstract Submitted
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Impregnation transition in a powder¹ PASCAL RAUX, HELOISE COCKENPOT, DAVID QUERE, CHRISTOPHE CLANET, Physique et mécanique des milieux hétérogènes, CNRS, ESPCI, Paris, France & Ladhyx, CNRS, Ecole Polytechnique, Palaiseau, France — When an initially dry pile of micrometrical grains comes into contact with a liquid, one can observe different behaviors, function of the wetting properties. If the contact angle with the solid is low, the liquid will invade the pile (impregnation), while for higher contact angles, the grains will stay dry. We present an experimental study of this phenomenon: a dry pile of glass beads is deposited on the liquid surface, and we vary the contact angle of the liquid on the grains. We report a critical contact angle below which impregnation always occurs, and develop a model to explain its value. Different parameters modifying this critical contact angle are also investigated.

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