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**Disentangling cold nuclear matter effects through open heavy-flavour production in p-Pb and pp collisions** MARIA VITTORIA GARZELLI, MICHAEL BENZKE, BERND KНИЕHL, University of Hamburg, II Institute for Theoretical Physics — Data on open and hidden heavy-flavour production in high-energy heavy-ion collisions have traditionally been considered as a precious source of information regarding the onset of a Quark-Gluon-Plasma phase and its properties. A precise understanding of cold nuclear matter effects is however crucial to extract firm conclusions on many hot nuclear matter aspects. By means of a General-Mass Variable-Flavour-Number-Scheme framework capable of simulating both  $pp$  and  $pA$  collisions using, as far as possible, consistent input and underlying theoretical assumptions, we investigate up to which extent relevant theoretical uncertainties affecting the  $pp$  case propagate to the  $pA$  case and we critically revise the possibility that the data on open heavy-flavour production in  $pPb$  collisions recently collected at the Large Hadron Collider, in conjunction with those in  $pp$  collisions, can be used to infer accurate constraints on cold nuclear matter effects.

Maria Vittoria Garzelli  
University of Hamburg

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