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## The Extremes of the Underlying Event (12' + 3')

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Our understanding of the transition from partons to hadrons in QCD has been challenged in recent years. In particular for high-multiplicity minimum-bias events at the LHC, novel experimentation techniques have revealed tantalising indications of non-trivial and possibly collective phenomena. A new wave of model building efforts has ensued, including ideas of colour reconnections, colour ropes, interacting strings, and hydrodynamics. It is essential to develop further sensitive probes of the mechanisms underpinning this fundamental aspect of QCD, to find answers to key questions such as if and how jet universality is broken and whether thermalisation is relevant in pp collisions. The answers will not only be of fundamental interest but will also impact precision studies that rely on hadronisation models, as well as the interpretation of heavy-ion results that use pp collisions as a reference. Using strangeness and baryons as tracers, we propose an extension of minimum-bias studies adapted to the environment of the underlying event which show substantial discriminatory power between several alternative models of soft physics. The applicability of this and related works to improve soft physics modelling at the LHC is explored.

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