



## LES is more

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The atmospheric boundary layer (ABL) can be regarded as a complex physical system due to the dynamical interplay between various processes that occur at different length and time scales. This separation of scales is a challenge for models that aim to simulate these dynamics as they often apply a fixed spatial resolution throughout the domain and/or in time. This work presents a proof of concept of an adaptive mesh refinement strategy for simulations of ABL systems. Such a strategy aims to focus the computational resources automatically on the regions in space and time that require it the most. The overall analysis shows that the method has a clear potential for numerical investigations of the most challenging atmospheric cases.