GENERATIVE MODELLING OF STOCHASTIC PARAMETRISATIONS FOR GEOPHYSICAL FLUID DYNAMICS

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We discuss a generative modelling strategy for the stochastic parametrisation of geophysical fluid dynamics models. Stochastic parametrisations are highly desired in fluid dynamics as they enable a principled ensemble generation for forecast and uncertainty quantification applications. Our contribution is a method to learn the stochastic parametrisation as a generative model. We demonstrate the parameterisation as a score-based generative model and discuss the numerical implementation for the rotating shallow-water equations and the simulation results.