On the statistics of backscatter from sub-grid fluctuations at high Reynolds numbers[1] MICHELE BUZZICOTTI, Department of Physics & INFN, University of Rome Tor Vergata, Rome, Italy., HUSSEIN ALUIE, Department of Mechanical Engineering, University of Rochester, USA, LUCA BIFERALE, FABIO BONACCORSO, MORITZ LINKMANN, Department of Physics & INFN, University of Rome Tor Vergata, Rome, Italy. — We study the effect of different filtering strategies on the statistical properties of the subgrid-scale energy transfer of high Reynolds numbers homogeneous and isotropic turbulence. We focus on the upscale energy transfer (backscatter) from small to large scales. We discuss the extent to which the backscatter statistics depend on the filtering strategy, using either exact projectors on different subsets of Fourier modes or more traditional convolutions with analytical kernels in physical space. We also assess the backscatter contribution from different helical components of the sub-grid fluctuations.

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