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A new passive turbulence grid with improved isotropy RICHARD VONLANTHEN, PETER A. MONKEWITZ, Swiss Federal Institute of Technology Lausanne (EPFL) — To experimentally produce isotropic and near-homogeneous turbulence, a multitude of grids of various complexity have been used. The best results so far have been obtained with the most complex active grids. Here we propose yet another type of grid: a *passive* grid with tethered spheres attached at each mesh corner. The simplicity of this new grid is particularly interesting in facilities where active grids and secondary contractions after the grid cannot be implemented. Statistical quantities for different configurations are measured with a two-component LDA and compared to the plain grid without attachments. It is shown that the tethered spheres not only improve the balance of the average kinetic energies of the longitudinal and the transverse velocity components u^2_{rms} and v^2_{rms} but also the spectral isotropy E_{uu}/E_{vv}.

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