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Lagrangianmea-surements in two-dimensional turbulenceMICHAEL RIVERA, MICHAELTWARDOS, ROBERT ECKE, Los Alamos National Laboratory — We present sta-tistical properties of two-dimensional turbulence from the lagrangian perspective.Utilizing experimental measurements from an electromagnetically forced stratifiedlayer, results obtained from classical analysis tools, such as the relative diffusion rateof two particles (*i.e.* the t^3 Richardson diffusion law), as well as more recent techniques, such as relative position doubling time analysis, are presented and compared.These results will be contrasted with earlier measurements in a similar system tohelp clarify the interpretation of these earlier results, as well as shed light on mixingproperties of two-dimensional turbulence.

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