

The Experimental Determination of a Thermal Diffusivity Due to Turbulent Transport*

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In plasmas where the turbulent processes are dominated by turbulence, it is not always straight forward to identify the magnitude of the experimental transport diffusion coefficients. This is primarily due to the fact that with turbulent transport it is not possible to unambiguously separate the convective from the conductive or diffusive parts of the transport. For the energy transport it is not just a matter of deciding whether the convection term is $5/2$ or $3/2$ times the product of the particle flux and the temperature. The expression for the convection term depends upon the type of turbulence which is causing the transport. It is possible, however, to gain some information about the turbulent processes by comparing the measured particle flux to the measured total energy flux.

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