Abstract Submitted
for the DFD09 Meeting of
The American Physical Society

Direct simulation of fully-developed turbulent flow bounded by perfectly-permeable wall SATOSHI YOKOJIMA, Shizuoka University, Japan — The effect of wall imperviousness (wall-blocking effect) on the turbulent channel flows has been investigated. To this end, we numerically realize a new system, fully-developed turbulent flow bounded by a perfectly-permeable wall which is obtained by removing only the impermeable properties from a solid wall. It is shown that the perfectly-permeable wall has a drag two-order-of-magnitude higher than does the impermeable solid wall, indicating that permeable boundaries can be an efficient mixing device.

Satoshi Yokojima
Shizuoka University, Japan

Date submitted: 07 Aug 2009 Electronic form version 1.4