Abstract Submitted
for the DFD11 Meeting of
The American Physical Society

Transport and Mixing of the Oglio River Inflow into Lake Iseo CHARLIE HOGG, HERBERT HUPPERT, Institute of Theoretical Geophysics, University of Cambridge, UK, JORG IMBERGER, Centre for Water Research, University of Western Australia, Australia — The fate of river water entering a lake remains an uncertainty in many important limnological questions. These questions include how to improve standard water management practices and how lake ecosystems will change in future climate scenarios. This paper describes a field campaign carried out to understand the transport and mixing of a river inlet into Lake Iseo, a subalpine lake in Italy. We observed the low Froude number inflow to fall laterally after entering the lake. We suggest that this is caused by baroclinic acceleration. This laterally falling regime has not, to our knowledge, previously been described in the literature. In addition, measurements of a range of tracers were taken to find the dilution of the river after it had started to intrude into the lake. The tracers used were temperature, salinity, dissolved oxygen, coloured dissolved organic matter and turbidity. Our results found self-consistent mixing rates from the available natural tracers. These findings contribute added evidence and improve the understanding of what mechanisms cause mixing of river inflows.

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Date submitted: 01 Aug 2011 Electronic form version 1.4