

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

**Heat Transport in spin chains** JINSHAN WU, MONA BERCIU, UBC

— The Projection operator technique, usually used to study the relaxation toward thermal equilibrium, is extended to investigate non-equilibrium but stationary processes. Particularly, in this work we apply it to study heat transport in short spin chains with Heisenberg, anisotropic Heisenberg and XY couplings plus a large magnetic field. One long-standing question is under what circumstance the relation between thermal current and local temperature obeys Fourier's Law. Our results suggest that for certain parameters and short chains the heat transport does obey Fourier's Law. The evolution towards a diverging thermal conductivity, expected in the bulk limit, is also elucidated.

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Date submitted: 23 Nov 2007

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