Time-Dependent Behavior in Arrays of Coupled Heisenberg Spin Chains ROBERT KONIK, Brookhaven Natl Lab, ANDREW JAMES, London Centre for Nanoscience, J-S CAUX, Universiteit van Amsterdan — We employ matrix product state methods combined with data from exact solvability to study infinite arrays of coupled XXZ Heisenberg spin chains of finite length under a time dependent perturbation. We present results for both sudden changes (quantum quenches) as well more gradual changes in the interchain coupling. We benchmark our results and methods against perturbation theory as well as available equilibrium results on two dimensional Heisenberg models. We discuss these results in light of recent pump-probe resonant inelastic x-ray scattering experiments on the iridate compound Sr_2IrO_4.

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