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**Mathematics > Dynamical Systems**

# Connecting orbits for families of Tonelli Hamiltonians

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We investigate the existence of Arnold diffusion-type orbits for systems obtained by iterating in any order the time-one maps of a family of Tonelli Hamiltonians. Such systems are known as 'polysystems' or 'iterated function systems'. When specialized to families of twist maps on the cylinder, our results are similar to those obtained by Moeckel [20] and Le Calvez [15]. Our approach is based on weak KAM theory and is close to the one used by Bernard in [3] to study the case of a single Tonelli Hamiltonian.

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