

SPEAKER:

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TITLE:

Timelike asymptotics for global solutions to a scalar quasilinear wave equation satisfying the weak null condition

ABSTRACT:

I will discuss the timelike asymptotics for global solutions to a scalar quasilinear wave equation in three space dimensions. This equation satisfies the weak null condition and has global existence for sufficiently small, smooth, and localized initial data. I will present an asymptotic formula for a global solution to this scalar equation inside the light cone (i.e., for $|x| < t$). This formula involves the scattering data obtained in the author's previous asymptotic completeness result, and it can be used to show that the global solution must vanish under certain decaying assumptions on this solution or the corresponding scattering data, provided that the scalar equation violates the null condition.