\[ \nabla^2 u = f(x, y, z) \]

\[
\begin{aligned}
    u &= \sum_k c_k \phi_k \\
    u &= \int G f \, d\tilde{x} \\
    G &= -\sum_k \frac{\psi_k \phi_k}{\lambda_k} \\
    c_k &= -\frac{\langle f, \psi_k \rangle}{\lambda_k \langle \phi_k, \psi_k \rangle}
\end{aligned}
\]

Mon, Wed, Fri 8:45–9:35 am Room 119 Physics

Prof. Thomas Witelski Fall 2014


Course description: Initial and boundary value problems for the heat and wave equations in one and several dimensions. Fourier series and integrals, eigenvalue problems. Laplace transforms, solutions via contour integration, and elementary complex variables. Solutions via Green’s functions. Intended for applied math students and students in science and engineering.

Prerequisites: Undergraduate-level background in linear algebra and ordinary differential equations, Math 221 and 356, or Math 216 and 353, or equivalents.


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