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18.306 Advanced Partial Differential Equations with Applications  
Fall 2009

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Lecture 26 2009 12 09 WED

TOPICS: Green's function. Poisson equation. Stokes equation.  
Example: stokes drag on a sphere.

Poisson equation in 3-D. Green's function (infinite domain).

Example of Green's functions applications: Stokes Flow.

Stokes flow equations. Justification.

Stokes flow produced by a point force.

Flows produced by higher order singularities (force dipoles, etc).

Flow around a sphere held fixed in a flow constant far away from the sphere.

Stokes drag.

Discussion of the problems caused by the slow decay of these solutions.