Lecture 24 2009 12 02 WED


Continue with lecture #23. Heat equation $T_t = T_{xx}$ in 1-D.

Further examples
#6 Signaling problem in half space $x>0$. $T$ given at $x = 0$. No I.C.
   -- Green's Function. Use symmetries. Reduce problem to solving ode.
#7 Signaling problems in an interval, with $T$ or $T_x$ given on one side, and $T$ or $T_x$ vanishing on the other.
   -- Green's functions by method of images.

START WITH SOURCE TERMS: $T_t = T_{xx} + S$, homogeneous IC and BC.
Formulate problem.

To solve: re-interpret equation in terms of test functions.

DISTRIBUTIONS: functions as weights under the integral. Generalized functions: linear maps from test function onto constants. Examples: Delta function, Principal Value, Derivative of Delta function, etc.
Define derivatives of generalized functions.