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***Optimal three cylinder inequality for solutions to parabolic equations and stability estimates in inverse problems***

In some recent papers ( [1], [2] ) on inverse elliptic and parabolic boundary value problems with unknown boundaries, some interesting relationship between sharp stability estimates and strong unique continuation properties of solutions to PDE have been point out and exploited. Following this line, in this talk, we present some optimal three cylinder inequalities for solutions to parabolic equations with time dependent coefficients and discuss some application of it to prove stability estimates to the problems of determination of unknown boundaries.

- [1] Alessandrini G., Beretta E., Rosset E., Vessella S., Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4) Vol. XXIX (2000) pp. 755-806.
- [2] Canuto B., Rosset E., Vessella S., Trans. Am. Math. Soc. 354, n. 2, (2002) pp. 491-535.