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Desensitizing controls for the heat equation with respect to boundary variations

In this talk, I will present some recent results obtained in collaboration with Sylvain Ervedoza and Yannick Privat concerning desensitizing controls for the heat equation posed on a bounded domain of $\mathbb{R}^d$. The desensitization problem roughly consists in finding a control function, distributed on a subdomain, such that some functional depending on the solution of the heat equation (in our case, the L^2 norm of the solution on another subdomain) is locally insensitive to some perturbation of the equation. Here, the main originalty of our work relies on the fact that the perturbation is the domain itself, in the sense that its boundary can be subject to some small variations. I will present various definitions of the desensitization problem and give some positive and negative results related to them.