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## Abstracts of Short Communications and Posters

### Section:

## 17. Control Theory and Optimization

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**Local observability, ideals and finiteness conditions**

Let $I_{x_0}$ be the ideal generated by germs of functions vanishing at $x_0$ from the observation algebra of an analytic control system on $\mathbf{R}^n$. The system is locally observable at $x_0$ iff the real radical of $I_{x_0}$ is maximal. If real radical is replaced by ordinary radical, the condition of maximality gets stronger. It is equivalent to a finiteness condition considered by Gauthier and Jouan, which implies that observation algebra is finitely analytically generated at $x_0$. Thus maximality of the ordinary radical of $I_{x_0}$ gives both local observability and finite analytic generatedness. On the other hand, maximality of the real radical of $I_{x_0}$ is too weak to guarantee finite analytic generatedness of the observation algebra.