

# Blow-up Problems to Some Delay Differential Equations

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## Abstract

Time delays frequently arise in biological and social phenomena and are often modeled mathematically by delay differential equations. It is also well known that many such phenomena exhibit nonlinear behavior. In this talk, we consider how the interaction between time delay and nonlinearity influences the behavior of solutions, focusing in particular on the phenomenon of finite-time blow-up. After briefly reviewing several results on blow-up problems in equations with constant delay, we present our main results on finite-time blow-up in systems with distributed time delays and with state-dependent delays. This talk is based on joint works with Y. Nakata and J. Nishiguchi.

## References

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