报告题目： Controlled Singular Volterra Integral Equations and Pontryagin Maximum Principle

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报告摘要：

This talk is concerned with a class of (controlled) singular Volterra integral equations, which could be used to describe problems involving memories. The well-known fractional order ordinary differential equations of the Riemann--Liouville or Caputo types are strictly special cases of the equations studied in this paper. Well-posedness and some regularity results in proper spaces are established for such kind of equations. For an associated optimal control problem, by using a Liapounoff's type theorem and the spike variation technique, we establish a Pontryagin's type maximum principle for optimal controls. Different from the existing literature of optimal controls for fractional differential equations, our method enables us to deal with the problem without assuming regularity conditions on the controls, the convexity condition on the control domain, andsome additional unnecessary conditions on the nonlinear terms of the integral equation and the cost functional. This is a joint work with Jiongmin Yong.
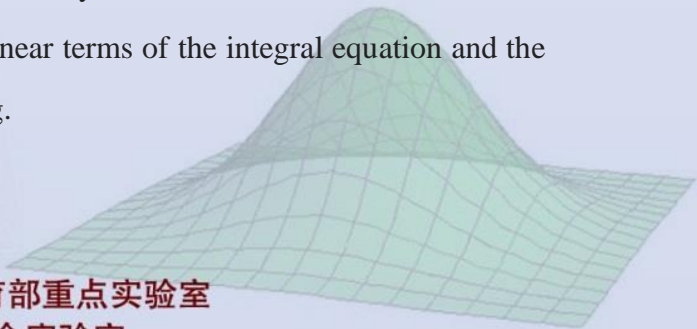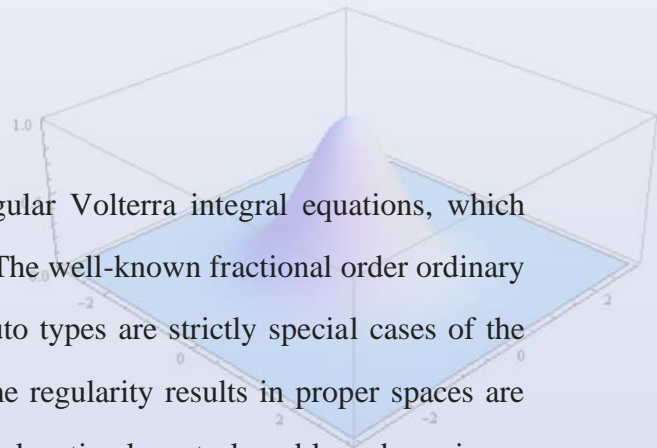
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