

Abstract

This dissertation investigates fractional differential equations with discontinuous right-hand sides, specifically systems with periodic boundary solutions. Beginning with foundational definitions in Chapter 1, the study proceeds to analyse the planar model in Chapter 2, proving solution existence and uniqueness and analysing bifurcations using the Poincaré Map. Subsequent chapters extend this analysis to higher-dimensional problems and examine sliding motion within fractional differential equations. In the last chapter, alternative solution formulations for discontinuous fractional differential equations are presented.