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Krantz, Steven G.

Differential equations. Theory, technique, and practice. 2nd ed.

Textbooks in Mathematics. Boca Raton, FL: CRC Press (ISBN 978-1-4822-4702-2/hbk). xvi, 541 p. (2015).

This is the second edition of a very nice textbook on differential equation written by Steven Krantz, a very respected researcher and a prolific writer. Retaining many of the strong aspects of the first edition which received a positive feedback from the readers, the new edition focuses on clarity of exposition and examples, many of which feature applications of differential equations. New examples have been added and exercise sets have been augmented, some parts of the material have been rearranged, material on nonlinear differential equations and dynamical systems has been refined reflecting some of current research ideas in the field. As in the first edition, the revision retains the unique Historical Notes sections, Math Nuggets, the Anatomy of an Application sections, and the Problems for review and Discovery sections. Being an homage to the excellent writing skills of George Simmons and his well-known text on differential equations written back in 1972, this updated edition maintains the highest standards of mathematics exposition. Warmly recommended as a comprehensive and modern textbook on theory, methods, and applications of differential equations!
Svitlana P. Rogovchenko (Kristiansand)

Classification: I75

Keywords: differential equations; solution methods; qualitative theory; power series solutions; numerical methods for differential equations; Fourier series; calculus of variations; partial differential equations; dynamical systems; Laplace transform