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Sommario/riassunto

This volume presents modern developments in analysis, PDEs and
 geometric analysis by some of the leading worldwide experts,
 prominent junior and senior researchers who were invited to be part of
 the Ghent Analysis & PDE Center Methusalem Seminars from 2021 to
 2022. The contributions are from the speakers of the Methusalem
 Colloquium, Methusalem Junior Seminar and Geometric Analysis
 Seminar. The volume has two main topics: 1. Analysis and PDEs. The
 volume presents recent results in fundamental problems for solving
 partial integro-differential equations in different settings such as
 Euclidean spaces, manifolds, Banach spaces, and many others.
 Discussions about the global and local solvability using micro-local and
 harmonic analysis methods, studies of new techniques and approaches

arising from a physical perspective or the mathematical point of view have also been included. Several connected branches arising in this regard are shown. 2. Geometric analysis. The volume presents studies of modern techniques for elliptic and subelliptic PDEs that in recent times have been used to establish new results in differential geometry and differential topology. These topics involve the intrinsic research in microlocal analysis, geometric analysis, and harmonic analysis abroad. Different problems having relevant geometric information for different applications in mathematical physics and other problems of classification have been considered.
