

Investigating Smoothness: An In-Depth Study of Extremely Degenerate Elliptic Equations

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Abstract : The presented research is dedicated to an extensive examination of the regularity properties associated with a specific class of equations, namely extremely degenerate elliptic equations. This study holds significance in unraveling the complexities inherent in these equations and understanding the smoothness of their solutions. The focus is on analyzing the regularity of results, aiming to contribute to the broader field of mathematical theory. By delving into the intricacies of extremely degenerate elliptic equations, the research seeks to advance our understanding beyond conventional analyses, addressing challenges posed by degeneracy and pushing the boundaries of classical analytical methods. The motivation for this exploration lies in the practical applicability of mathematical models, particularly in real-world scenarios where physical phenomena exhibit characteristics that challenge traditional mathematical modeling. The research aspires to fill gaps in the current understanding of regularity properties within solutions to extremely degenerate elliptic equations, ultimately contributing to both theoretical foundations and practical applications in diverse scientific fields.

Keywords : investigating smoothness, extremely degenerate elliptic equations, regularity properties, mathematical analysis, complexity solutions

Conference Title : ICMSA 2024 : International Conference on Mathematical Statistics and Applications

Conference Location : New York, United States

Conference Dates : April 22-23, 2024