

INTRODUCTION TO SUPERGEOMETRY

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In this mini-course, we shall introduce basic concepts of supergeometry with an eye on (ordinary, non-super) practical geometric applications. The key point to be emphasized is that of supergeometry as a simplifying and unifying language for seemingly unrelated/complicated geometric structures and formulas. With this in mind, we shall first see some fundamentals concerning 'super' analogues of linear algebra and calculus, and then jump to supermanifolds together with supergeometric structures on them. These structures can encode in a simple way Lie algebroids, Courant algebroids, etc, while supercalculus is a powerful tool which can be used to study complicated formulas/theorems (like Mathai-Quillen representatives for characteristic classes of vector bundles).