Constructing solutions to supergravity equations from Lie-algebraic data

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Abstract:

Courant algebroids provide a convenient framework for formulating and investigating various aspects of string theory. For instance, the bosonic part of the superstring background equations (the equations of motion of heterotic, type I, or type II supergravities) can be conveniently described using certain structures on Courant algebroids. Since these structures behave naturally under pullbacks, one can construct solutions of the complicated background equations by first solving the relevant equations in a simpler setup, and then pulling the result back to an exact Courant algebroid. I will show how the procedure works, what are the relevant equations, and I will describe a class of solutions to generalised string background equations (in type II) on the product of AdS and a Riemannian symmetric space.