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(I) Nonrelativistic Strings and Exotic Geometries

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I will discuss different notions of nonrelativistic strings and their target space geometries. The first example comes from a self-contained corner of string theory dubbed nonrelativistic string theory, which is closely related to string theory in the discrete light-cone quantization. The appropriate spacetime geometry for nonrelativistic string theory is a stringy generalization of Newton-Cartan geometry. The second example involves sigma models at a Lifshitz point, which describe strings moving in bimetric spacetime. In the limit when the two metrics coincide, the relativistic sigma model that underlies string theory can be recovered. This study of Lifshitz-type sigma models also provides useful insights for constructing a quantum theory of membranes.

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