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Aspects of General Relativity in 1+1 Dimensions¹ RICHARD MELLINGER, SCOTT FRASER, THOMAS GUTIERREZ, Cal Poly San Luis Obispo — What would be the properties of a universe with only one spatial dimension and one time dimension? General relativity in 1+1 dimensions is unique since the two curvature terms in the Einstein field equations cancel. This makes the Einstein field equations algebraic rather than differential equations. This special feature can make 1+1 dimensionality attractive as an instructional tool to simplify the mathematics that many beginners find opaque. We explore the implications and features of the Einstein field equations in 1+1 dimensions and find they provide a surprisingly rich and interesting model.

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