

Bend it Like Riemann:

The Strange and Wonderful World of Non-Euclidean Geometry

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Abstract

What if I told you that the sum of the angles in a triangle can be less than 180° ? Or that parallel lines could intersect? You would then probably tell me that I have no business giving a presentation on mathematics. But in fact, these things could happen. When we think about geometry in the traditional sense, like when we were in grade school, we are talking about geometric properties in a flat, two-dimensional space. This geometry is known as Euclidean geometry.

However, we live in a three-dimensional space. Therefore, thanks to non-Euclidean geometry, we can define geometry in the world as we know it. In this presentation, we will discuss the history of both Euclidean and non-Euclidean geometries and their properties and applications.