



Math for the people, by the people.

sectional curvature

Canonical name	SectionalCurvature
Date of creation	2013-03-22 15:54:15
Last modified on	2013-03-22 15:54:15
Owner	juanman (12619)
Last modified by	juanman (12619)
Numerical id	5
Author	juanman (12619)
Entry type	Definition
Classification	msc 53B21
Classification	msc 53B20
Related topic	RiemannianMetric

Let M be a Riemannian manifold. Let p be a point in M and let S be a two-dimensional subspace of $T_p M$. Then the *sectional curvature* of S at p is defined as

$$K(S) = \frac{g(R(x, y)x, y)}{g(x, x)g(y, y) - g(x, y)^2}$$

where x, y span S , g is the metric tensor and R is the Riemann's curvature tensor.

This is a natural generalization of the classical Gaussian curvature for surfaces.