

TD11 - More curvature

Exercise 1. Compute the Riemann, Ricci and scalar curvatures of the following Riemannian manifolds with their standard metric.

1. \mathbb{S}^n
2. \mathbb{D} with $g_{\mathbb{D}} = \frac{4}{(1-\|x\|^2)^2} \langle \cdot, \cdot \rangle$.

Exercise 2. 1. Compute the sectional curvature of \mathbb{S}_{ρ}^n , the Euclidean sphere of radius ρ .

2. Compute the sectional curvature of $(\mathbb{D}, g_{\mathbb{D}})$.