

Transferring Theorems to Spherical Geometry

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For many theorems of the Euclidean plane counterparts in the Spherical *resp.* Hyperbolic geometry are known. Most of them look like as we expect, but sometimes a counterpart on an Euclidean theorem, which seems to be quite obvious, has strange behaviour if some elementary parameter changes. Mainly the Spherical geometry is a fountain of surprising results, what is due to the fact that the surface of the sphere has finite size.

In this talk we study spherical counterparts of theorems connected with the theorem of Thales, namely the *common chord theorem*, the *sliding ladder problem* and the *circle of Apollonios*. While the Thales' theorem itself has 'simple' counterparts on the sphere, the others lead us to the interesting, but quite unknown subject of spherical curves of higher degree.