

Coordinate Systems

exercise session

WiSe 2020/2021

Map Projections

Sven Gedicke

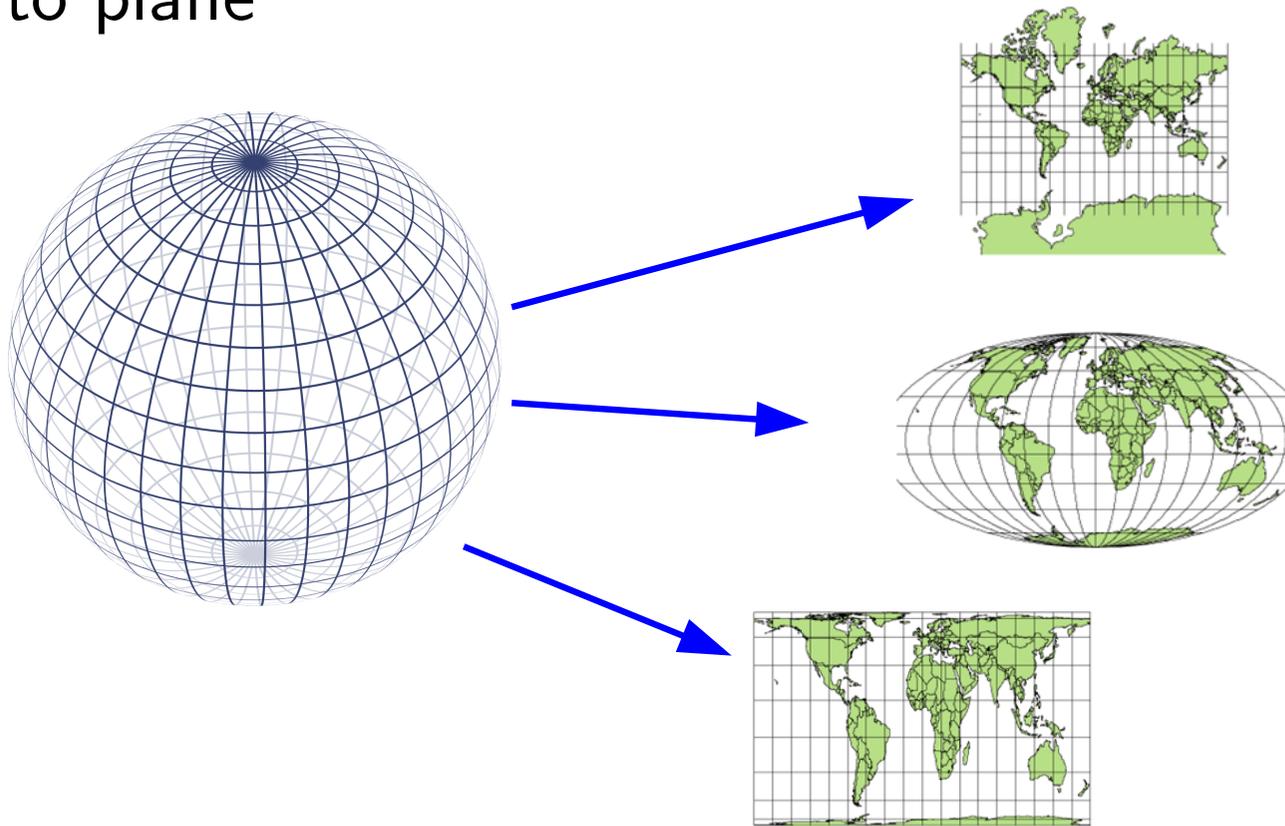
Institute of Geodesy and Geoinformation

University of Bonn

Motivation

map projection

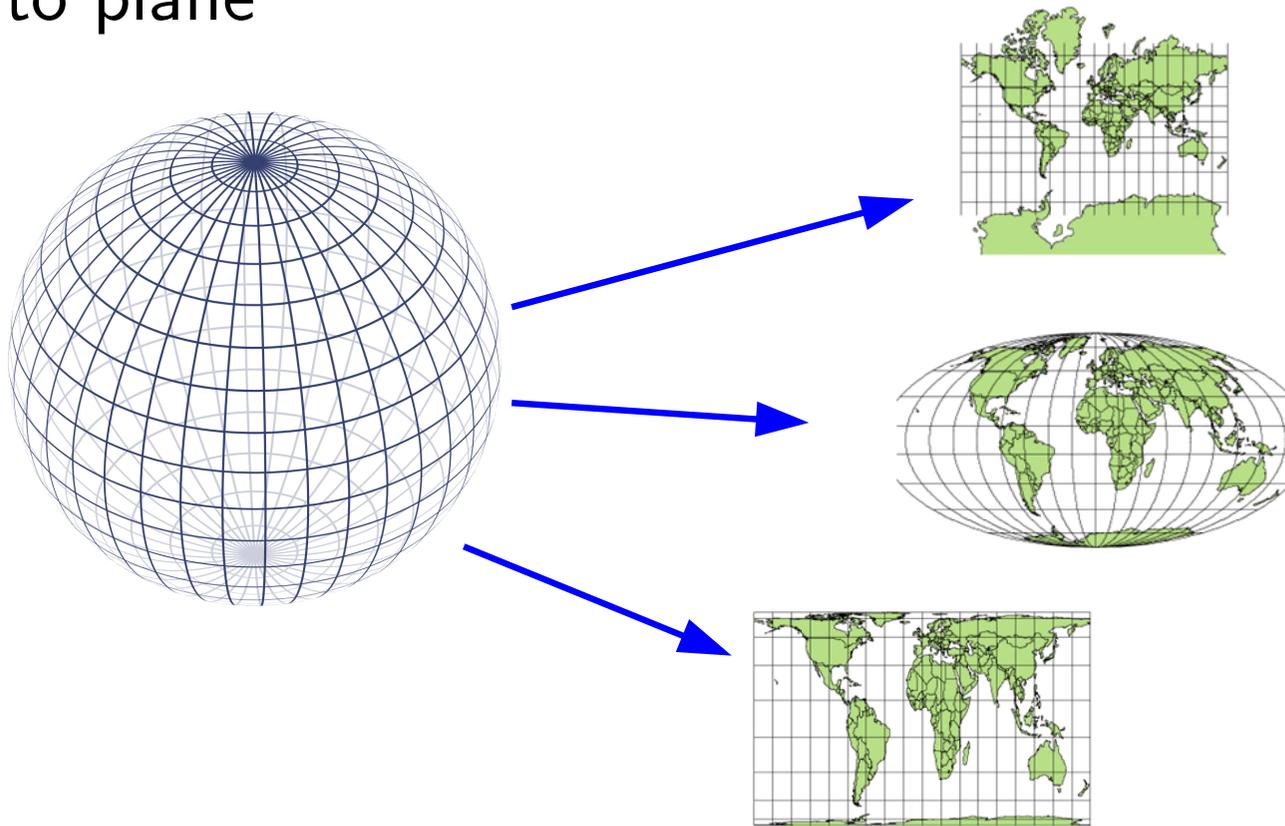
point on reference surface (e.g. sphere, ellipsoid) is mapped to plane



Motivation

map projection

point on reference surface (e.g. sphere, ellipsoid) is mapped to plane

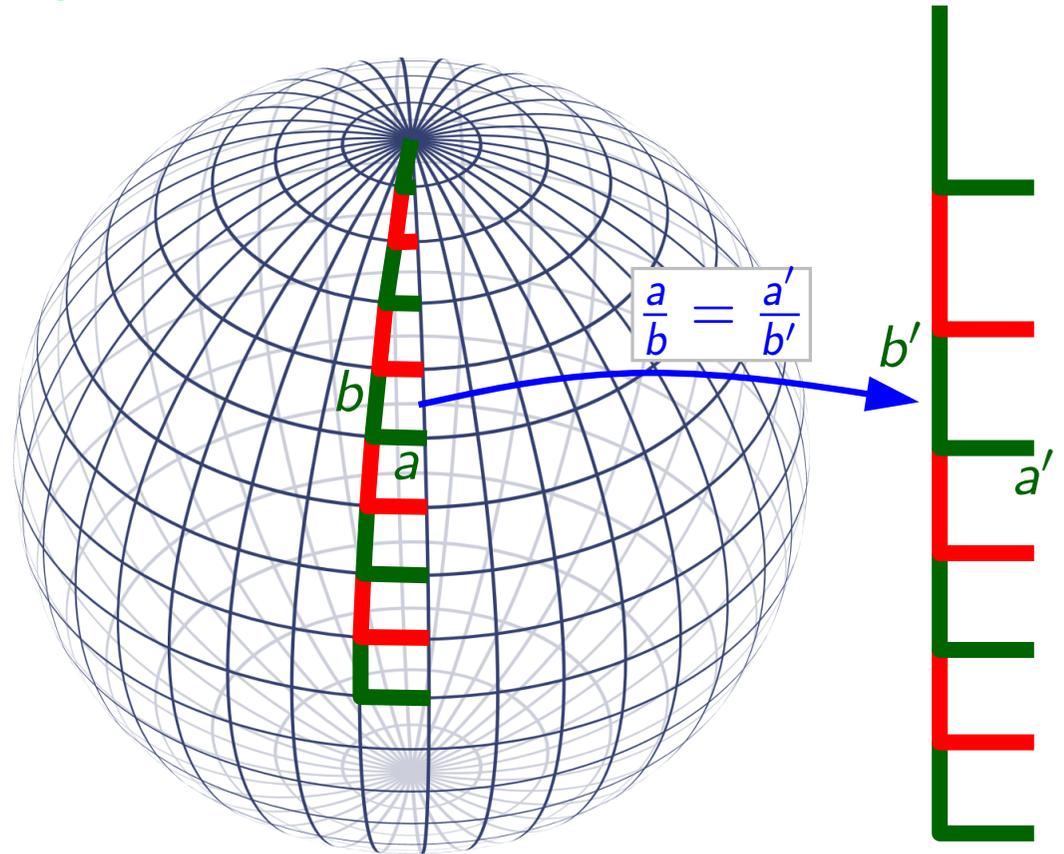


→ different map projections cause different distortions

Motivation

mercator projection

map areas between lines of constant latitude/longitude to rectangles that **preserve aspect ratios**.



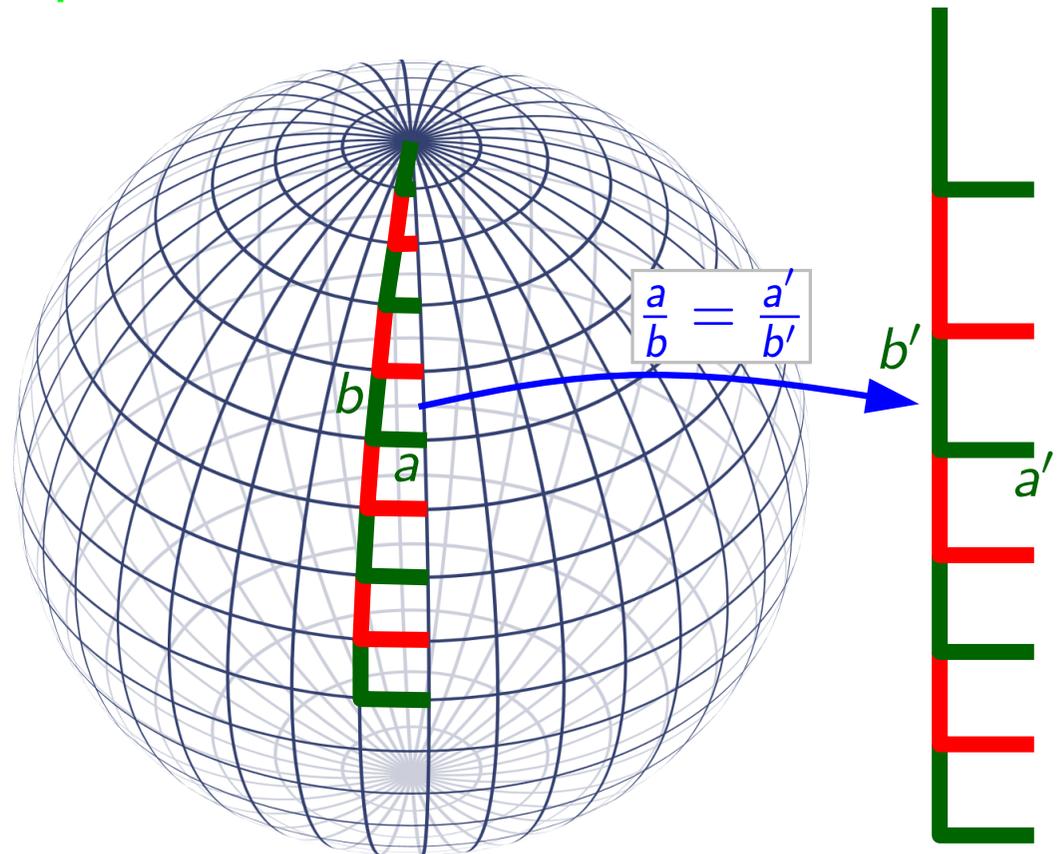
Motivation

mercator projection

map areas between lines of constant latitude/longitude to rectangles that **preserve aspect ratios**.

→ **angles are preserved**

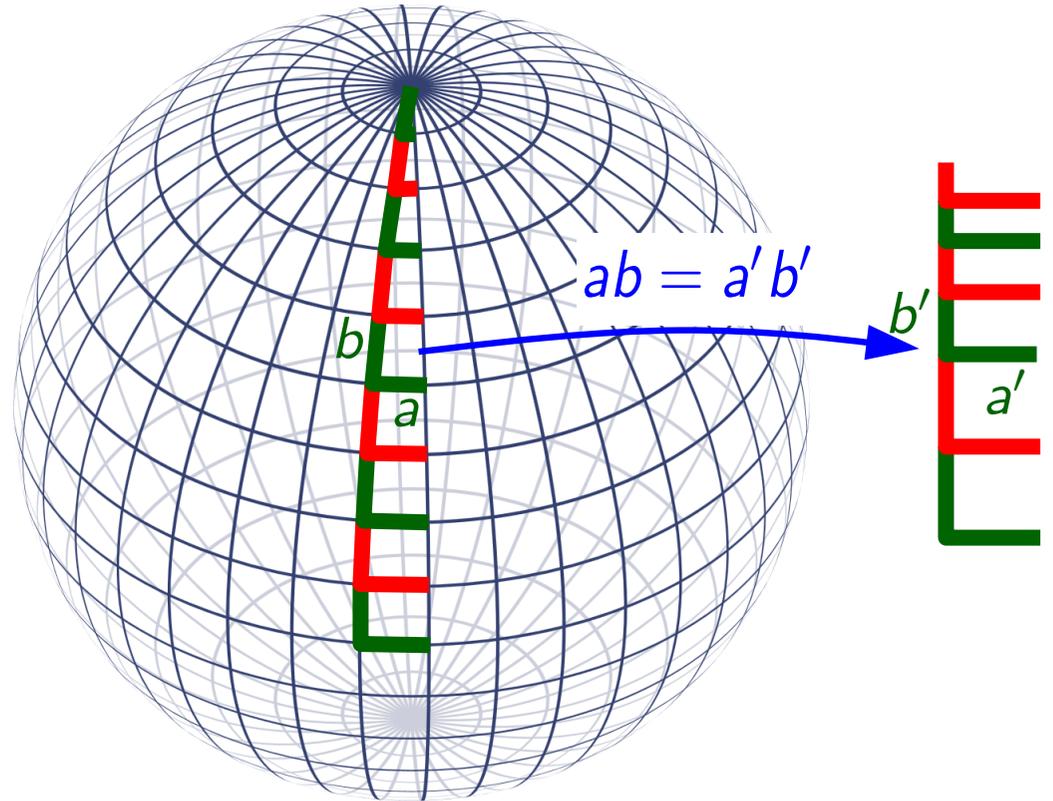
→ **areas are distorted**
(esp. close to poles)



Motivation

cylindrical equal-area projection

map areas between lines of constant latitude/longitude to rectangles of **the same sizes**.

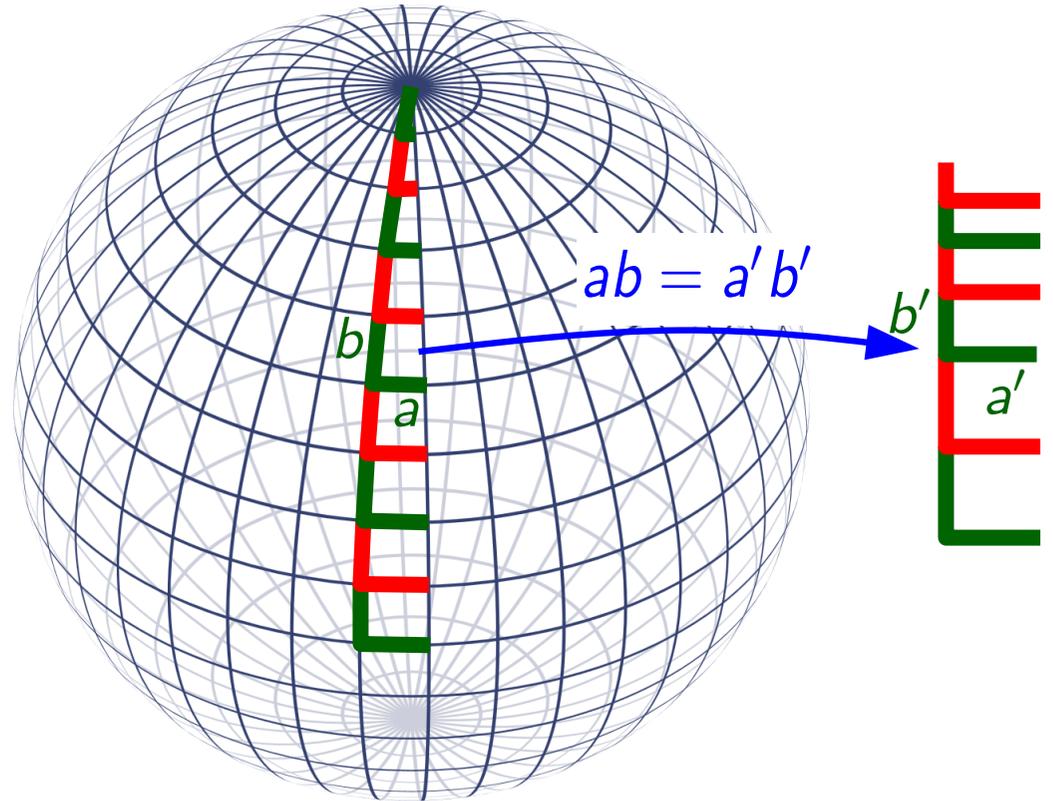


Motivation

cylindrical equal-area projection

map areas between lines of constant latitude/longitude to rectangles of **the same sizes**.

- distorted aspect ratios
- distorted angles



Exercise

mercator projection



VS.

**cylindrical equal-area
projection**



Tutorial QGIS

QGIS is a free desktop geographic information system (GIS) application for

- viewing
- editing
- analyzing

geospatial data.

Download:

<https://www.qgis.org/de/site/>



(23. September 2020)

Any questions?

→ Sven Gedicke
gedicke[at]igg.uni-bonn.de