Introduction
A new method for precise, high-resolution and large-scale measurement of plate tectonics with the aid of radar remote sensing. For the derivation of the 3D vectors of tectonic displacements two measurement intervals, separated by at least one year or by a tectonic event are required. At each interval several satellite images from different radar viewing angles are obtained, and the 3D-coordinates of ground control points (GCPs) are calculated.

SAR Geodesy
By correcting the influence of the ionosphere, atmosphere and earth tides, it is possible to measure the absolute coordinates of ground control points with high accuracy. By comparing the absolute positions of the GCPs of the two acquisition periods, the displacements that have occurred in the meantime can be determined in X, Y and Z.

Applications
Measurement of continental drift, of elevations and subsidence by the melting of very large glacier areas or in gas production, as well as of tectonic shifts after earthquakes. Furthermore, the continuity of continental drift in earthquake-prone areas can be checked with the help of long-term recording series.

Conclusions:
• Geodetic SAR is a valuable tool to measure tectonic displacements in 3D-coordinates
• It works best over sites with a lot of man-made infrastructure, like buildings and lamp poles
• The achieved accuracy over cities is better than 10cm in X, Y and Z
• Remote Sensing Method! No installations on the ground are required