



Background

General didactical background

Background idea is an interdisciplinary approach with science. Students shall experience Mathematics reasonable, significant and interesting by extra-mathematical references; learning in contexts shall contribute to an intuitive mathematic understanding. By means of scientific contexts and methods the often watched gap between formal maths and authentic experience shall be closed on the one hand and versatility of mathematic terms or formulas shall be experienced on the other hand.

The described teaching module is a contribution to an active-oriented learning. The students explore the usefulness of mathematical concepts in the real world. Parallax measurement is an example *par excellence*.

Scientific and Mathematical Background

Parallax is any alteration in the relative apparent positions of objects produced by a shift in the position of the observer. This technique enabled Bessel (1838) to measure the distance to a nearby star (61 Cygni). Before that there were only speculations about the distances.

Therefore parallax is not only important from historical point of view; it gives astronomers very accurate data. From a mathematics teacher's view it can be used in order to show the utility of similar triangles.

Two triangles are said to be similar if and only if the angles of one are equal to the corresponding angles of the other. In this case, the lengths of their corresponding sides are proportional. This occurs for example when two triangles share an angle and the sides opposite to that angle are parallel.