

## Rocklogger – can a smartphone replace a geological compass?

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The possibility of using a smartphone with the app “Rocklogger” instead of a geological compass was examined. For this purpose, around 350 pairs of geological measurements, each carried out by a geological compass and a smartphone, were collected. These values were compared by their means and directly by vector subtraction. In direct comparison, the digital data has a lower precision with a median deviation of 13°. There are of course also deviations at the mean values, but they are in most cases acceptable and the deviations get smaller if there are more measurements. Care has to be taken at dipping angles above 40°, and then the deviations of single measurements can get unacceptable high, so a mean value of several measurements is essential to obtain useable data. To sum up, smartphones can be used as geological compass if some extra measurements are taken to compensate for the lower precision and measuring speed or rather quantity are more important than high precision. If high precision is needed as common in most scientific settings, a traditional geological compass is still the way to go. To ensure a long life of the smartphone, it should be used in a waterproof cover to avoid scratches and penetration of moisture.