



Use of a digital terrain model for air temperature and radiation calculation in an alpine environment

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A high resolution digital terrain model, 10 m, has been used in order to make a calculation of air temperature and radiation at an alpine environment (Peñalara Natural Park, Central System of the Iberian Peninsula). The point measurements provided by a high resolution meteorological network have been interpolated using different methods. A cross validation algorithm has been performed in order to quantify the error of the different methodologies. Special attention has been drawn to take into account local processes, thermal inversions and seasonal variability. It is also explained how this tool will be part of a complete environmental tool for evaluation of microclimates and topoclimates in mountainous regions.