



## On the Weibull distribution for wind energy assessment

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The two parameter Weibull distribution is traditionally used to describe the long term fluctuations in the wind speed as part of the theoretical framework for wind energy assessment of wind farms. The Weibull distribution is described by a shape and a scale parameter. Here, based on recent long-term measurements performed by a wind lidar, the vertical profile of the shape parameter will be discussed for a sub-urban site, a coastal site and a marine site. The profile of the shape parameter was found to be substantially different over land and sea. A parameterization of the vertical behavior of the shape parameter is proposed, that is applicable both on-shore and off-shore.