

# Meteorological flight plans for soaring

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Post-processing of numerical weather prediction with a regional convection model provides the meteorological information that is crucial to soaring pilots: wind, lift rates, and climb altitude. Regional forecasts are presented to pilots by showing the potential flight distance for a standard class glider on a geographical map – a very intuitive form for pilots. Based on these regionalized forecasts soaring flight tasks can be planned and optimized by applying a software tool named TopTask. The tool allows to specify the best glide ratio and the corresponding glide speed of the glider to be used - be it a paraglider or an open class sailplane. This meteorological flight planning has been available for national and international gliding championships such as Swiss Glide 2004 and Viking Glide 2005 in the pilot self-briefing system pc-met of the German weather service. Scored task speeds were compared to forecasted TopTask speeds and GPS recorded flights were simulated with TopTask in order to assess the quality of the forecasted cloud base altitude and the forecasted lift rate. Then flight plans based on different operational models like LME-TOP THERM and HIRLAM were intercompared to the scored speeds for Viking Glide 2005. Results of these verifications will be presented at the Congress. With the help of TopTask recorded glider flights can be used to tune the forecasting procedures for convective lift rates and for the depth of the convective boundary layer. Operational numerical thermal forecasts have reached a quality that is useful for practical soaring even in complex topography. Self-briefing systems make these regional thermal forecasts available and provide the possibility of meteorological flight planning to pilots. At present pc-met contains about 180 regions with routine thermal forecasts for Germany, the BeNeLux countries, France, the Alps, and Sweden.