Further developments on seasonal statistical forecasting over the Mediterranean

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The general main goal of MEDSCOPE project is focused on the improvement of seasonal forecasting systems skill over the Mediterranean area. New developments and verification are proposed for an empirical seasonal forecasting system, with the purpose of offering an alternative source of information that complements the forecasts provided by GCMs. These developments aim at enhancing flexibility of the tool: in addition to temperature and precipitation, it can be used to produce forecasts for new predictands based on spatial fields (over a selected area) or pattern-based indices. Time parameters can be customized too, so it is possible to adapt the extension of the period being forecasted and the lead time needed for issuing it. To use the optimum set of predictors for every configuration, the proposed system incorporates algorithms for their objective selection. Predictors can be selected either from a given set of climate indices, or from spatial maps, e.g. sea surface temperature or geopotential height at different pressure levels. Forecasts will be based on multiple linear regression, providing a deterministic output. Probabilities for terciles or other thresholds are computed using residuals from regression.
Every system run includes a set of verification scores or maps providing insight on the reliability of the results for that particular configuration. Finally, to assess the practical utility of this tool, a comprehensive verification of this new version is conducted and also compared with the most recent version of C3S models. In particular, one month lead-time forecasts of three-month accumulated precipitation and mean surface temperature is produced for every month over a common hindcast period.