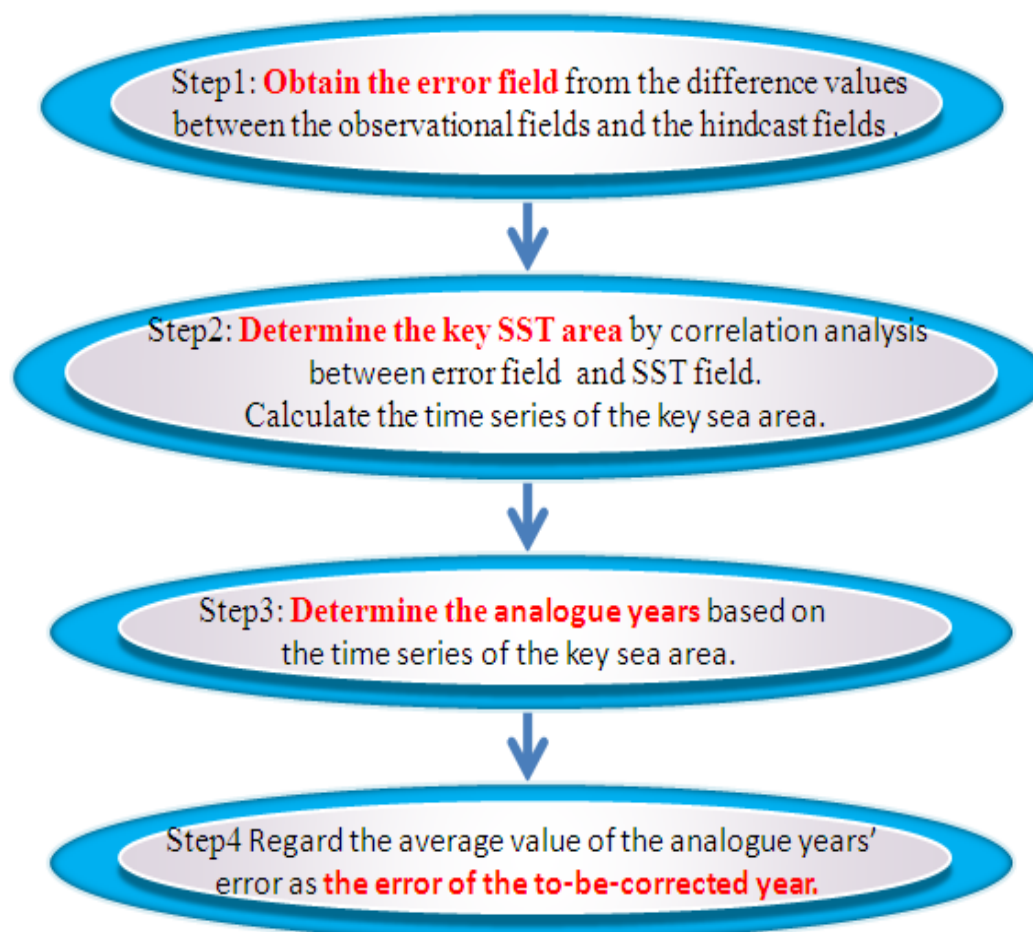


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中文题目：华南持续性降水过程的分类环流特征与水汽来源分析

作者：房一禾，陈海山，龚志强*，徐方姝等

中文摘要：基于国家气候中心第二代海气耦合模式（BCC_CSM）对 1991—2013 年东北地区夏季降水的回报结果和同期实况降水资料及由 NOAA 重构的海温资料，利用模式对东北夏季降水的预报误差与前期海温的关系，寻找历史相似信息，并提取相似年误差，对 BCC_CSM 回报结果进行动力-相似误差订正。在此思路的基础上，设计了多种订正方案，希望通过对各种方案订正结果的对比分析，确定一种适合对东北夏季降水模式误差的动力-相似订正方案。结果表明：加权订正 1 方案，最适合作为东北夏季降水模式误差的订正方法，在距平相关系数（ACC）上，可将模式预报的-0.13(2009-2013 年)和 0.15(1991-1995 年)提高到 0.16 (2009-2013)和 0.24 (1991-1995)。此外，本研究还提供了基于多方案的东北夏季降水概率预报，其准确率由模式预报的 35.9%提升到 59.6%。



Conceptual map of the dynamic-analogue correction method

英文题目：Multi-scheme corrected dynamic-analogue prediction of summer precipitation in Northeastern China based on the BCC_CSM

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英文摘要: Based on the summer precipitation hindcasts during 1991-2013 produced by Beijing Climate Center Climate System Model (BCC_CSM), the relationship between the prediction error sets in northeastern China (NEC) and sea surface temperatures (SSTs) is analyzed and a dynamic-analogue prediction method is proposed to improve the summer precipitation prediction skill of BCC_CSM, through combining model historical analogue prediction error with the real time output. Based on the dynamic-analogue method, multiple correction schemes are also designed and compared with each other to identify one proper scheme which is most suitable for the summer precipitation prediction in NEC. Cross-validation showed that five-year average of spatial anomaly correlation coefficient (ACC) of summer precipitation is respectively improved from $-0.13(2009-2013)/0.15(1991-1995)$ of BCC_CSM prediction to $0.16(2009-2013)/0.24(1991-1995)$ using the weighted-correction-I scheme. Compared with the pure statistical scheme and other dynamic-analogue schemes, the weighted-correction-I has the best performance in high ACC and low root-mean-standard-error (RMSE), implying this scheme has its potential to improve the forecast skill of summer precipitation in NEC. Furthermore, this study also presents the probabilistic prediction of the summer precipitation in NEC based on multiple correction schemes, which indicates that the five-year average of prediction accuracy can be improved from 35.9% (BCC_CSM result) to 59.6%.