

Impacts and Adaptation

Projected Surface Water Resource of the Yangtze River Basin Before 2050

Liu Bo^{1, 2, 4}, Jiang Tong^{1, 2}, Ren Guoyu², Klaus Fraedrich³

1 Nanjing Institute of Geography and Limnology, Chinese Academy of Sciences, Nanjing 210008, China;

2 Laboratory for Climate Studies, China Meteorological Administration, Beijing 100081, China;

3 Meteorological Institute, Hamburg University, Hamburg, Germany;

4 Graduate University of Chinese Academy of Sciences, Beijing 100049

收稿日期 修回日期 网络版发布日期 接受日期

摘要 Based on the projected runoff depth by ECHAM5/MPI-OM climate model for the Yangtze River basin under SRES A2, A1B, B1 greenhouse gas emission scenarios in 2001-2050, the spatial and temporal patterns of future surface water resource in the Yangtze River basin were analyzed. The results show that the long-term average annual surface water resource volumes of the Yangtze River under the three scenarios are similar, while interannual fluctuations are complicated with different trends. The surface water resource declines gradually in fluctuations under the A2 scenario, shows no obvious trends under the A1B scenario, and displays a relatively significant increasing trend under the B1 scenario. Decadal variations of surface water resource are notable, showing an overall decline trend under all the three scenarios in 2001-2030, while an increasing trend to varying extent after the 2030s, especially in summer and winter. The projected future water resource volume in the Yangtze River basin overall remains at the current level, showing an evident spatial uneven feature.

Abstract Based on the projected runoff depth by ECHAM5/MPI-OM climate model for the Yangtze River basin under SRES A2, A1B, B1 greenhouse gas emission scenarios in 2001-2050, the spatial and temporal patterns of future surface water resource in the Yangtze River basin were analyzed. The results show that the long-term average annual surface water resource volumes of the Yangtze River under the three scenarios are similar, while interannual fluctuations are complicated with different trends. The surface water resource declines gradually in fluctuations under the A2 scenario, shows no obvious trends under the A1B scenario, and displays a relatively significant increasing trend under the B1 scenario. Decadal variations of surface water resource are notable, showing an overall decline trend under all the three scenarios in 2001-2030, while an increasing trend to varying extent after the 2030s, especially in summer and winter. The projected future water resource volume in the Yangtze River basin overall remains at the current level, showing an evident spatial uneven feature.

关键词 [projection](#) [climate change](#) [surface water resource](#) [greenhouse gas emission scenario](#) [the Yangtze River basin](#)

分类号

DOI:

通讯作者:

作者个人主页:

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF](#) (345KB)

▶ [\[HTML全文\]](#) (0KB)

▶ [参考文献\[PDF\]](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [引用本文](#)

▶ [Email Alert](#)

相关信息

▶ [本刊中 包含“projection”的 相关文章](#)

▶ 本文作者相关文章

· [Liu Bo](#)

·

· [Jiang Tong](#)

·

· [Ren Guoyu](#)

· [Klaus Fraedrich](#)

