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Title: Evolution characteristics of drought and flood in Huaihe River Basin in recent 50 years

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关键词: [淮河流域](#); [旱涝](#); [时空分布](#); [演变特征](#)

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摘要: 以淮河流域及周边地区48个气象站点1961-2010年50年间的逐日降水过程为基础资料,以地理信息系统技术为数据处理平台,结合Mann-Kendall秩次相关检验法、降水Z指数和集对分析法(SPA)等,分析了淮河流域旱涝的时空演变特征,结果表明:(1)夏秋两季降水的变化对淮河流域旱涝格局产生显著的影响,旱涝出现的频率和强度在增加;(2)20世纪90年代年以来,夏涝和秋旱面积呈现出波动上升的趋势,年际旱涝面积的变化与秋季较为同步;(3)淮河流域春夏多旱,易旱区主要分布在中上游地区,上游以春旱为主,中游以夏旱为主,而夏秋多涝,多集中于中下游地区;(4)春夏旱涝交替多出现于淮河中游北部地区,年际旱涝交替易发生于上游大部分和中游南部地区。

Abstract: With reference to daily rainfall data recorded by 48 weather stations/offices in reaches of Huaihe River and its surrounding region in the past 50 years (1961-2010) and data processing platform of geo-information system technology, combined with Mann-Kendall rank correlation method, precipitation Z index and set pair analysis (SPA) method, this article analyzed the spatio-temporal evolution characteristics of droughts and floods of the Huaihe River Basin. The results

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show that (1) the precipitation change in summer and autumn has a significant impact on the drought and flood pattern in the Huaihe River Basin, in which the frequency and intensity of the flood and drought disasters are increasing; (2) since the 1990s, the areas of summer floods and autumn droughts in the basin tended to fluctuate and rise, with the variations of yearly drought and flood areas synchronized with those in autumns; (3) the middle to upper reaches of Huaihe River are prone to droughts in summer, while the middle to lower reaches are prone to flood in autumn and (4) drought and flood alternating occurrence in spring and summer is most likely to take place in northern area of the middle reach of Huaihe River, while yearly drought and flood alternating occurrences are observed in most areas of upper reaches and southern area of the middle reach.

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