Global review of the research progress and trend of evapotranspiration

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Abstract: Evapotranspiration is the key link between the atmospheric process and terrestrial hydrological process, which plays an important role in water cycle processes and water balance on the regional/basin scales. However, with the effects of global warming climate and human activities, potential evapotranspiration and its response to meteorological parameters have changed significantly in recent decades across the globe. To accuratelly measurement and estimation of evapotranspiration, investigation of the temporal—spatial variations of evapotranspiration has become an important part of the water cycle in response to global climate change. Therefore, we review the development of the evapotranspiration theoretical methods, evapotranspiration trends and the dominant factors, the temporal—spatial variations of evapotranspiration and sensitivity analysis, and summarize the main estimation models of evapotranspiration. The main methods for calculating and estimatingthe evapotranspiration are hydrologic method, micrometeorological method, plant physiology, remote sensing method and SPAC integrated simulation. We also review and synthesise the literatures to assess the applicability, advantages and disadvantages of the evapotranspiration estimation and measurement methods, to summarize the evapotranspiration trend rates and the influencing factors based on sensitivity and trend analysis. This study will provide an important scientific basis for determining the influence of climate change on water cycle processes and water resources, the hydrological cycle mechanisms of atmosphere—soil vegetation system, agricultural management.

Keywords: evapotranspiration; temporal—spatial variations; sensitivity; water cycle; climate change

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《地质论评》、《地质学报》(中、英文版)连续八次荣获“中国最具国际影响力学术期刊”称号

2019 年 10 月 28 日中国学术期刊未来论坛在北京会议中心举行, 会议发布了《中国学术期刊影响因子年报》,中国地质学会主办期刊《地质学报(英文版)》[*ACTA GEOLOGICA SINICA* (English Edition)]、《地质学报》和《地质论评》连续第八次蝉联“中国最具国际影响力学术期刊” 称号。《地质学报(英文版)》的国际影响力指数 *CI* 为 181.434,国际他引总被引频次 2715,国际他引影响因子(1.493)、《地质学报》的国际影响力指数 *CI* 为 165.638,国际他引总被引频次 3210,国际他引影响因子(0.650)、《地质论评》的国际影响力指数 *CI* 为 98.862,国际他引总被引频次 1632,国际他引影响因子(0.644),另外中国地质学会所属专业委员会主办的期刊《矿床地质》和《岩石矿物学杂志》也分别获得了“2019 中国国际影响力优秀学术期刊”称号。

《中国学术期刊影响因子年报》是由中国学术期刊(光盘版)电子杂志社、清华大学图书馆和中国科学文献计量评价研究中心联合研制,2012 年 12 月 26 日首度发布,时任新闻出版总署副署长、清华大学党委副书记等出席了首度发布会并发表讲话。据悉,《年报》将中国期刊分为人文社科、自然科学—工程技术两个类别,分别计算期刊的国际影响力指数(*CI*),按 *CI* 排序,遴选其中前 10%为国际影响力品牌学术期刊。其中 TOP5%(175 种)以内的期刊为“最具国际影响力学术期刊”、TOP 5%~10% (175 种) **(下转第 1514 页)**

strike-slip faults.

Keywords: extension and strike-slip; superposition and ratio relationship; balanced cross-section; Liaodong Bay depression; Cenozoic

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(上接第 1486 页) 为“国际影响力优秀学术期刊”。《年报》自 2012 年起已连续发布 8 年,其提供的统计数据科学准确、客观公正地分析了我国自主创办的本土学术期刊的国际影响力水平(自然科学—工程技术期期刊的 *CI* 是以各期刊被 SCI 统计源期刊他引数据为基础计算)。《年报》指出:今年共有 350 种自然科学与工程技术期刊入选“2019 中国最具国际影响力学术期刊”和“2019 中国国际影响力优秀学术期刊”,这些 TOP 期刊是我国学术期刊“走出去”的杰出代表,是我国科技强国战略和世界一流科技期刊建设的排头兵,对我国学术期刊的国际影响力提升起到了良好的带动作用。

LIU Zhiqiang: *Geological Review*, *Acta Geologica Sinica* (Chinese and English edition) continuously awarded the title of “the most influential international academic journals of China”