



## **Different impacts of two types of El Niño on the yield of early rice of Southern China**

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Rice production in Southern China (SC), constituting almost one third of total in China, has been proved to be closely associated with climate change. Different effects of the Eastern Pacific (EP) El Niño and the Central Pacific (CP) El Niño on rice yield in SC during boreal spring (May–June–July) is addressed by composite and correlation analyses using grid cell early rice yield data from 1982 to 2006. During EP El Niño events, rice yield in most area of SC is reduced; while during CP El Niño events, it increases mildly. The impacts between the EP and CP El Niño on rice yield show significant differences in majority areas of SC. Potential mechanism leading to the significant different effects of EP and CP El Niño on rice yield are investigated. During spring, CP El Niño decreases the rainfall in SC, which favors rice yield in SC; in contrast, EP El Niño significantly increases the precipitation in SC, consequently resulting into an unfavorable condition for rice production.