

## **Assessing the influence of drought on vegetation vigour within the Laohahe catchment, China, by NDVI and PDSI indices**

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**Abstract** The objective of this study is to assess the influence of drought on vegetation vigour. The correlation analysis based on different vegetation type was conducted between monthly NDVI and Palmer Drought Severity Index (PDSI) during the growing season within the Laohahe catchment. It was found that NDVI had good correlation with the PDSI, especially for shrubs and grasses. The correlation between NDVI and PDSI varies significantly from one month to another. The influence of drought on vegetation vigour is stronger in the first half of the growing season before the vegetation reaches its peak greenness. In order to take the seasonal effect into consideration, a regression model with seasonal dummy variables was used to simulate the relationship between the NDVI and PDSI. The results showed that the NDVI–PDSI relationship was significant ( $\alpha = 0.05$ ), and that NDVI was an effective indicator to monitor and detect droughts if seasonal timing was taken into account.

**Key words** drought; PDSI; NDVI; correlation analysis; regression analysis