

positively influenced by the previous autumnal precipitation. The growths of all species were sensitive to spring and summer precipitation, but the key climatic month for growth differed between species. Thus, for beech, the key months were May, June and July, whereas for oak, they were June and July, and for pine, they were June and August.

For each species, some between-stand differences of the climatic effects were also observed for the pointer years. Growth in B4 was not influenced by the climate of the previous year, in contrast to growth in B9 and B12. Among the oak stands, growth in O3 was the more sensitive to climate, particularly in June. The between-stand differences in climatic effects on growth were stronger for the pine stands. Thus, the growth in P3 was mainly influenced by the climate in the previous winter and was less influenced by temperatures in the current growing season. Trees growing in P8 were the only sensitive to the climate in July.

### **Climatic effects on earlywood and latewood growth**

The earlywood growth of both oak and pine was slightly sensitive to climate, and its response was different between stands (**Fig. 5**). Oak earlywood growth was negatively influenced by temperatures of the current January (O4, O19) and positively affected by precipitation in the current April (O4, O19) and June (O3, O4). Pine earlywood growth was positively correlated with temperatures and precipitation in the previous December (P3, P8) and with precipitation in January for P13 and was negatively influenced by the maximum temperatures in May (P13) and June (P3). In contrast, oak and pine latewood growth were very sensitive to climate for all stands. Oak latewood growth was positively correlated with the precipitation of the previous autumn-winter and precipitation from May to July. Pine latewood growth was negatively correlated with maximal temperatures in June and July and positively correlated with precipitation in February and from May to August. Only the oak latewood growth response to temperatures in the previous autumn and in the current summer was different between stands.

### **Growth response to soil water balance**

Bootstrapped correlations coefficients were quantified between each earlywood and latewood stand chronology and SWD indices. Oak earlywood growth was only significantly negatively correlated with  $I_s$  in June, whereas its latewood growth was sensitive to  $I_s$  from June to August. For pine, both earlywood and latewood growth were significantly correlated with  $I_s$  from June to September, but the correlation values were lower for earlywood compared to latewood (data not shown).

Response function analysis was performed between the stand total ring indices and 12 bioclimatic regressors (Tmax, monthly  $I_s$  and SWD duration) for two periods: from 1961 to 2007