Algorithm 1 Schematic of the **classification algorithm** for identifying PEDs in summer. Example for a single day i.

$\rho_{i,j}$ is the Pearson pattern correlation between day i and extremal pattern j, *RH700* is relative humidity at 700 hPa, *DIV500* is horizontal divergence at 500 hPa, *CAPE* is convective available potential energy, *P* is accumulated daily precipitation. ρ_{jt} (i.e. ρ thresholds) are determined as described in Sect. 2.1. **if** tests of local-scale meteorological variables are performed using the thresholds and grids described in Table 1. If *any* of the cells in the grid pass the test, then the next test is applied. For winter the algorithm is the same, except that CAPE is excluded and relative humidity is at 300 hPa.

for j in $(1, \ldots, K)$ **do** // Extremal patterns 1 to K
  if $(\rho_{i,j} \geq \rho_{jt})$ **then** // Synoptic-scale tests
    if $(RH700_i \geq RH700_{thresh})$ **then** // Local-scale tests
      if $(DIV500_i \geq DIV500_{thresh}$ **.OR.** $CAPE_i \geq CAPE_{thresh})$ **then**
        if $(P_i \geq P_{95D})$ **then**
          DAY_i classified as PED
        end if
      end if
    end if
  end if
end for