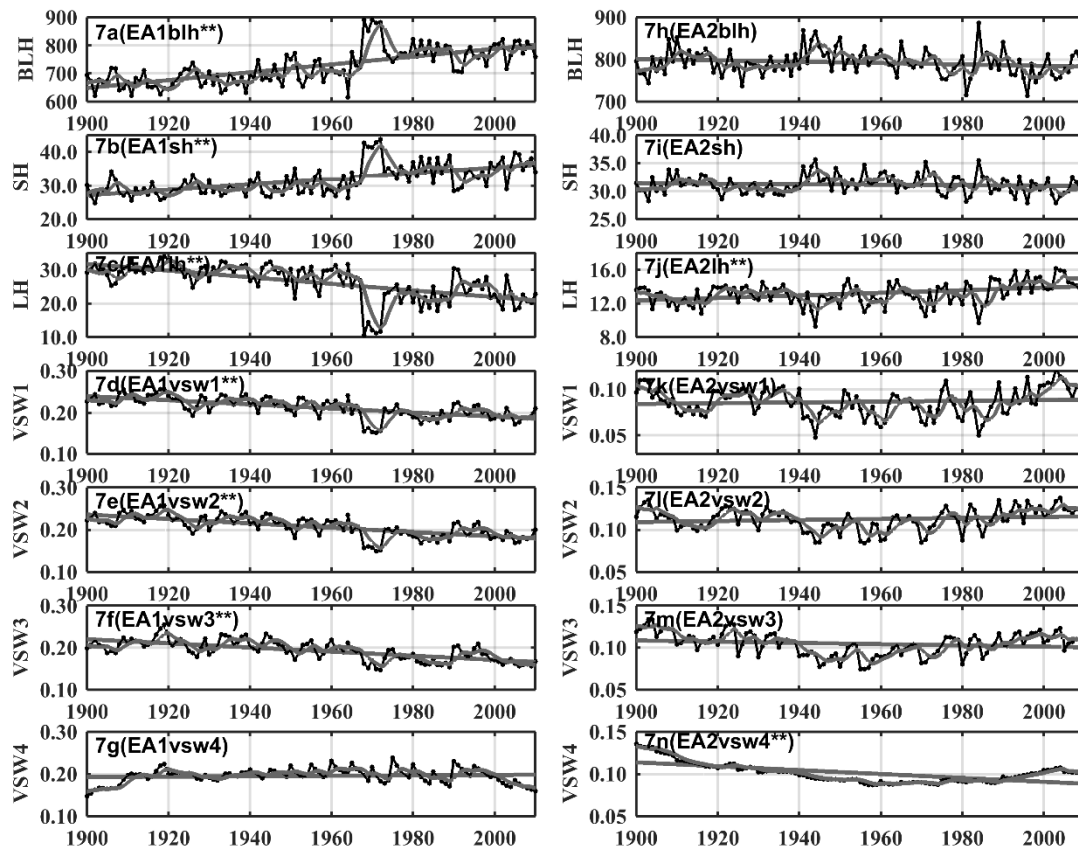


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↑Figure 1. The change of the BLH, sensible heat flux, latent heat flux and volumetric soil water of layers 1-4 of the eastern representative region in East Asia (The left column is for EA1, and the right column is for EA2) (Note: The black line is for annual average boundary layer height, the grey curve is for 11 years moving average and the grey line is for linear trend, \*\* means 99% of the test of significance and \* means 95% of the test of significance)

- From 1900 to 2010, in arid and semiarid area over East Asia, the BLH of the western areas had a decreasing trend, and the east had a rising trend (Fig. 1). While in arid and semiarid areas in North Africa, the BLH of the areas had a rising trend and other regions had a decreasing trend.
- On the spatial distribution, the BLH, sensible heat flux, latent heat flux and volumetric soil water had a good corresponding relationship.
- On the temporal change, in East Asia, the BLH had a stronger correlation with the thermodynamic factors than the dynamic factors (Fig. 1), while in the North Africa, the BLH had a stronger correlation with the dynamic factors. Besides, the upper level stratification also has some influence on the BLH's change.