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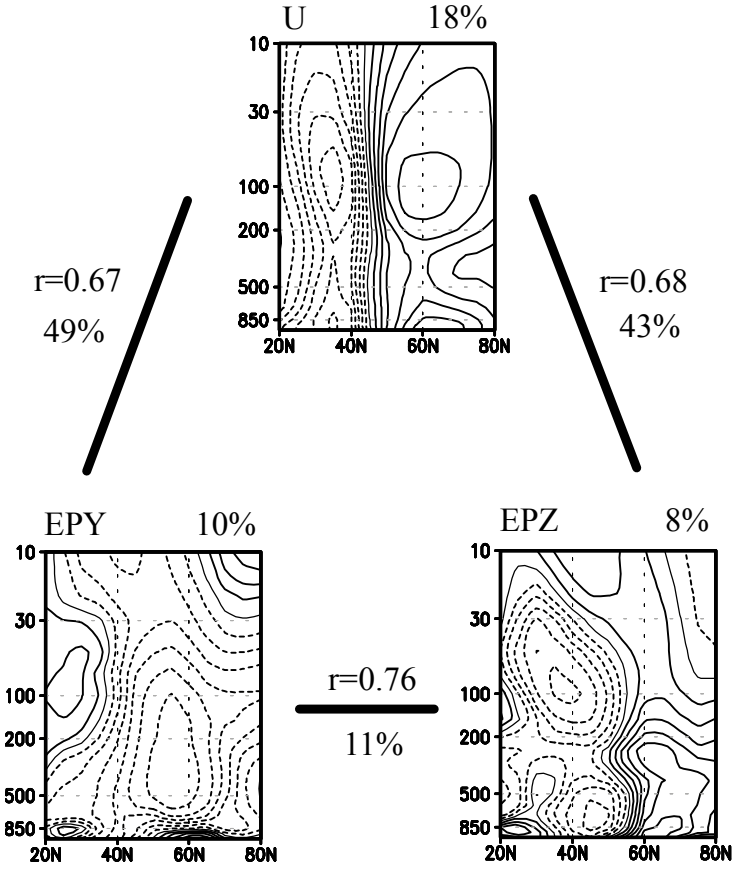

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Figure 1. Heterogeneous correlation maps of zonal wind U (top), meridional E-P flux EPY (lower left), and vertical E-P flux EPZ (lower right) showing the dominant mode of variability (Arctic Oscillation) in the winter season extracted by the sum MMCA method. Numbers at upper right indicate the percentage of variance explained by this mode. Numbers between panels indicate the correlation between the main time coefficients of each field (**r**) and the squared covariance fraction between them (percent). Contour interval is 0.1, and dashed lines indicate negative values.

- A new simple method of multivariable maximum covariance analysis (MMCA) for extracting common variability from multiple (more than two) datasets, that expands the singular value decomposition analysis method, is proposed. Two approaches of the method are proposed, one using the extreme of a summation of covariances (sum MMCA) and the other using the product of covariances (product MMCA).
- Both approaches are demonstrated by successfully extracting the variability related to the Arctic Oscillation from three monthly-mean meteorological datasets (e.g., Fig. 1).
- The method is useful because it is easily programmed and is computationally inexpensive.