

**Variability in Bergen winter climate**Atalel Getu Sahalu<sup>†</sup>;<sup>†</sup> Geophysical Institute of bergen University, NorwayLeading author: [atlget@gmail.com](mailto:atlget@gmail.com)

For the past two decades strong variation of winter time atmospheric circulation have been seen over the Northern Hemisphere oceanic basins, and these fluctuations have a strong impact on the distribution of climate elements mainly on temperature and precipitation. There is a connection between the winter temperature and precipitation over Northern Europe and the North Atlantic Oscillation (NAO). In this paper, the effect of the NAO on winter precipitation and temperature in Bergen, Norway is analysed using the statistical approaches of Empirical orthogonal Function analysis (EOFs), correlation and regression, scatter plot and Singular value decomposition technique (SVD). Principal Component Analysis (PCA) is used to see the effects of NAO on the temperature and precipitation of Bergen and we looked the correlation between the first principal component PC1, Bergen temperature and precipitation. The result shows that the negative correlation between principal Component (PC1) and Bergen temperature, suggests that a positive correlation between the NAO-Index and Bergen precipitation. This is also the same for the NAO-Index and Bergen precipitation. The relationship is such that high NAO-Index corresponds with warm and wet winters and a low NAO Index is associated with cold and dry winters experienced in Bergen.