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Abstract : Precipitation variability in space and time has been a focus of research over the past decades. The largest body of literature was essentially focused on long-term changes in average climates and in climate extremes. Analyses of the changes in the inter-annual climate variability (the year-to-year variability), which represent an index of climatic risk, received instead very less attention, but it represents an important issue in order to quantitatively measure the socioeconomic impact of climate change impact over water resources. In order to depict a general characterization of the long-term climate variability for the Campania region, located in Southern Italy within the Mediterranean basin, an analysis of the precipitation coefficient of variation, assumed as an index of inter-annual climate variability, was performed over the period 1918–2015 and compared with the annual precipitation regime and the intra-annual precipitation variability of the same region. The Mann–Kendall and the modified Mann–Kendall tests were applied to detect the sign and significance of the temporal changes and Sen’s test was applied to quantify the temporal changes in inter-annual variability. The results illustrated a generalized condition (73% of total stations) of statistically significant increase of inter-annual variability distributed almost over the whole analyzed area, even though the detected change appeared rather moderate in magnitude. The relationship between annual precipitation, intra-annual precipitation variability, and inter-annual precipitation variability was not clearly identified for the studied region, likely because of the characteristics of climatic homogeneity for the area under investigation. However, the comparative analyzes clearly showed how, if the variations in the annual precipitation regime and in the intra-annual precipitation variability are poorly significant (respectively for 9% and 11% of total station), changes in inter-annual precipitation variability are strongly marked over the studied region.

Key words : climates ; Long-term regional; Campania Region ; Southern Italy

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