



On the relationships between wildfires and Bagnouls-Gaussen's ombrothermic diagram during the period 1961-1997 in Greece

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The knowledge of the spatial and temporal patterns and trends of wildfires in relation to climate is important when exploring wildfire activity and the underlying causal factors. The relationships between meteorological conditions and fire occurrence at multiple spatial and temporal scales have been extensively studied and they are quite well known. In this study, we explored the relationships between wildfires and the Bagnouls-Gaussen's ombrothermic diagram during the period 1961-1997 in Greece. We first estimated the correlation coefficient between the yearly basis wildfires during the period 1961-1997 and the yearly basis dry period Bagnouls-Gaussen's ombrothermic diagram (considering the duration and the area) for every NUTS-3 counties (52) in Greece. Then, we interpolated the correlation coefficients so that to express the relationships between wildfires and Bagnouls-Gaussen's ombrothermic diagram all over the Greece. Positive strong correlation between fire occurrence and the selected drought index has been observed only in northwestern part of Greece suggesting a climate driven occurrence of forest fires. The correlation between fire occurrence and the selected drought index in the southern part of Greece was very low suggesting rather a fuel or human driven occurrence of forest fires than climate. These findings are in accordance to Meyn et al. (2007) who argued that it is the characteristics of the ecosystem that determine the relative importance of the two mechanisms; in biomass-rich, rarely-dry ecosystems large fires are limited by climate, while in biomass-poor, at least seasonally dry ecosystems large fires are limited by fuels.