Wind in Ireland: seasonality or long memory ?

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Since Haslett and Raftery's paper 'Space-Time Modelling with Long-Memory Dependence: Assessing Ireland's Wind Power Resource' (1989), modelling meteorological time series with long memory processes, in particular the ARFIMA model has become very common. Haslett and Raftery fitted an ARFIMA model on Irish daily wind speeds. In this paper, we try to reproduce Haslett and Raftery's results (focusing on the dynamic of the wind process, and not on cross-correlation and space dependencies), and show that an ARFIMA model does not properly capture the behaviour of the series. Indeed, the series show a periodic behaviour, that is not taken into account by the ARFIMA model. Removing this periodic behaviour yields no results either, we therefore try to fit a GARMA model that takes into account both seasonality and long memory If a GARMA process can be fitted to the data to model Irish daily data, we will show that these models could also be used to model Dutch hourly data.