Interpretation of Correlograms

Seasonal:

* In ACF, At every 12th lag - positive seasonal statistically significant spike - approaching to zero. ACF is never theoretically zero at seasonal lags if SAR component is present. Might be atleast one **( SAR )** -12 period seasonal component. statistically significant spikes for atleast 200 lags
* In PACF, At every 12th lag in positive seasonal statistically significant spikes approach zero with same type of decay as predecessors (Seasonal). There are 4 such statistically significant spikes. It does not trail long. So this might indicate lower order seasonal moving average component.
* In ACF, At every 3rd and 9th lag, negative seasonal statistically significant spike along with two more negative statistically significant spikes forms a pattern and repeats for every year. Seasonal interval of 6 starting from lag 3. (End of first quarter and Beginning of the last quarter) -- **SMA**

Simple:

* In ACF, Starting from 5th lag , 17th lag (Seasonal interval of 12) , not smoothly approaching zero (diverse patterns). Statistically significant for more than 200 lags.
* In PACF, there is a positive negative oscillation of spikes. But from the 14th lag, 18th lag (seasonal) smooth approach to zero.
* This pattern might indicate presence of a simple **ARMA**.

Interaction:

* In ACF, Starting from 7th lag with seasonal interval of 12, we have statistically significant spikes which may denote the interaction between seasonal and non-seasonal components.