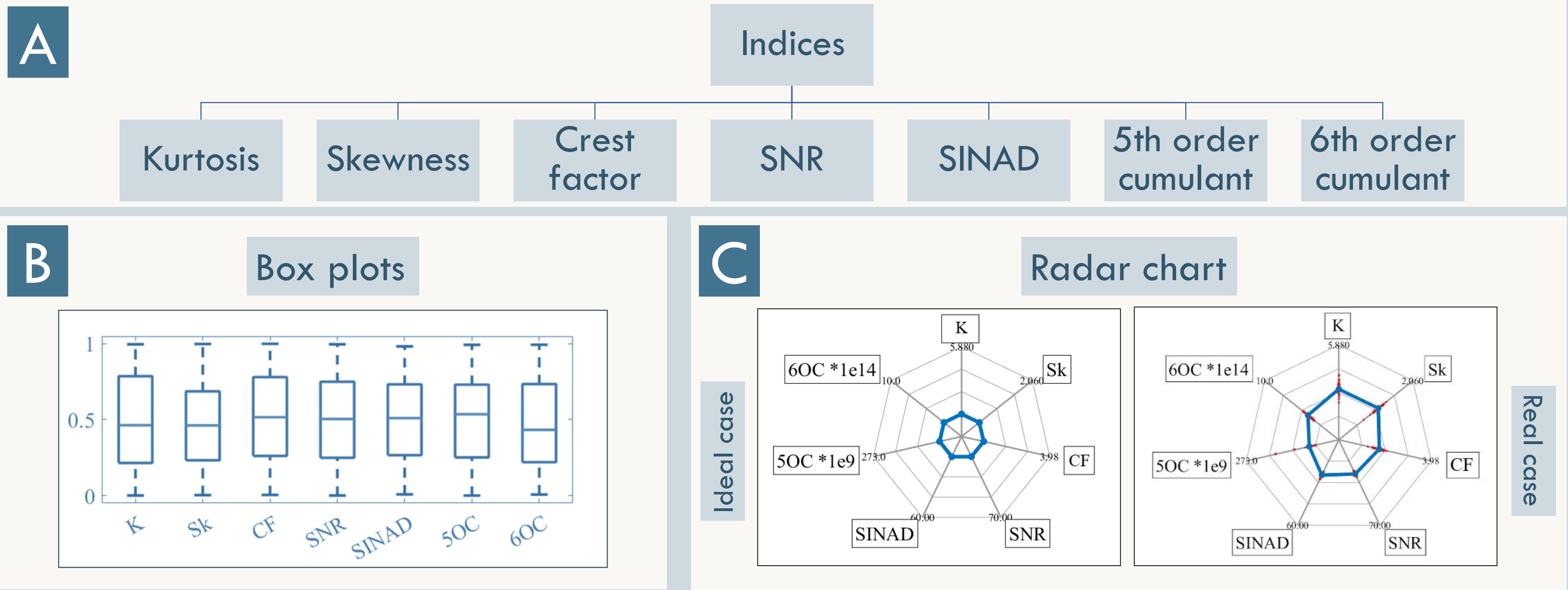


INTRODUCTION

- Power quality refers to the characteristics of the electrical supply that determine its ability to power devices and equipment without interruption or degradation
- The incorporation of new and more distributed energy resources would lead to appearance of hybrid electrical disturbances that need to be measured in a more feasible way.
- We propose the use of **EDA** (Exploratory Data Analysis), which allows discovering patterns and hidden relationships between data, through a popular statistical graph, **boxplot**, combined with a tool we call "**radar chart**"

MATERIALS AND METHODS



PROCEDURE

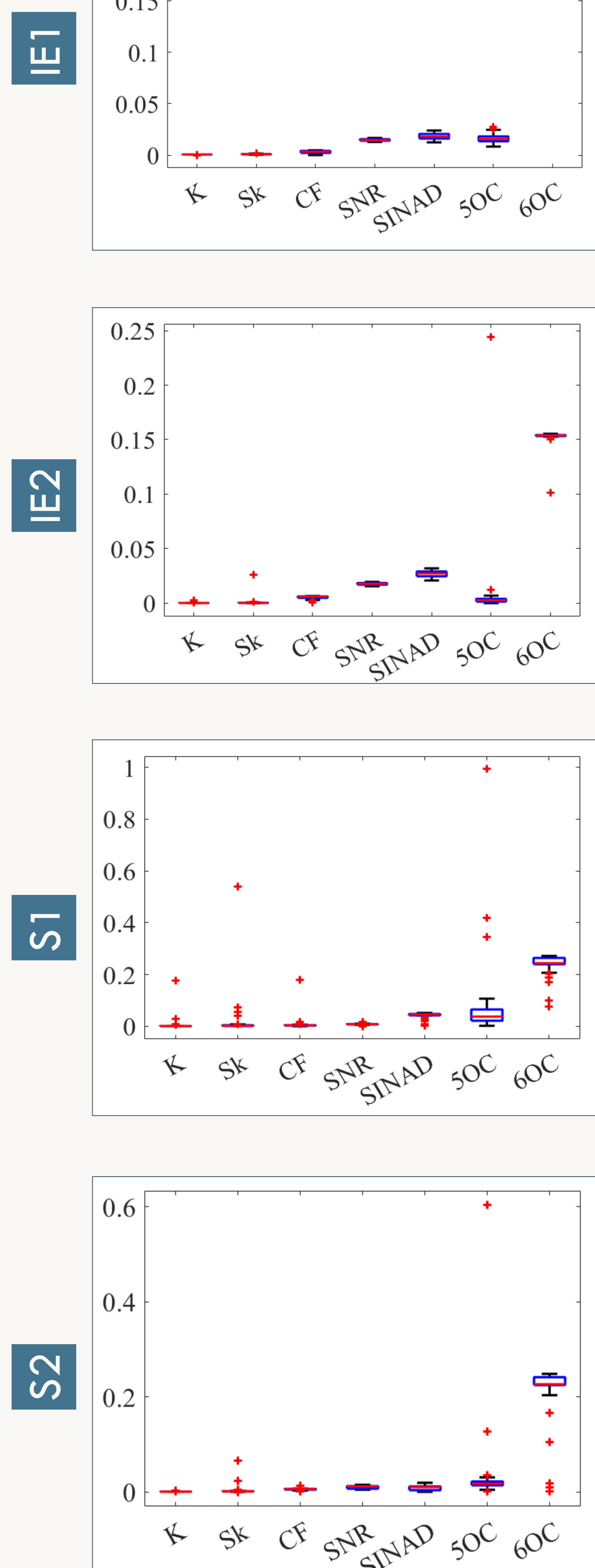
1. Data extraction
2. Obtaining the indicators by cycle and box-plots
3. Drawing radar chart per cycle
4. Area's calculation

RESULTS

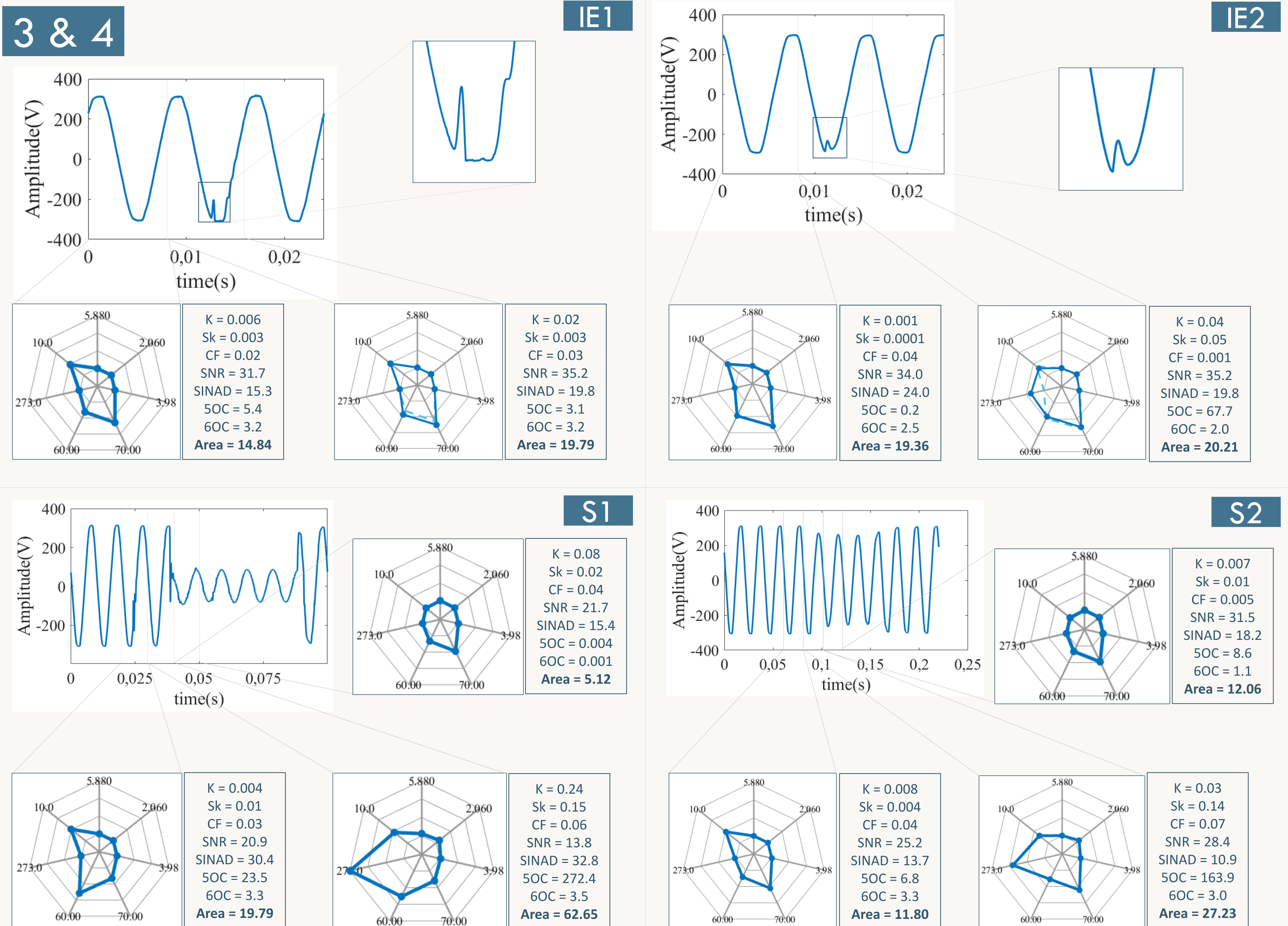
1

Data extraction: 2 impulsive event's signals (IE1 & IE2) + 2 sag's signals (S1 & S2)

2



3 & 4



CONCLUSIONS

- The radar chart helps the user to extract and compare traditional and non-traditional indicators. Ex.: 5OC detects transient events beyond kurtosis.
- Initially, the polygonal area remains in the same state corresponding to a 50Hz power supply. Once a disturbance is reached, a variation of the waveform occurs, and different states are measured and computed by the radar chart.
- A whole analysis can be made through the radar chart to extract different patterns (individual indices, polygonal area and patterns) representatives of the network state on the point under analysis.