

**Data acquisition**

Roller Bearing

Accelerometer

**Time signals**



Normal signal Ball fault signal IR- fault signal OR-fault signal

**Preprocessing: Time signal splitting**





**Feature Extraction**

Curtosis

Cepstral Coefficients

Fractal Dimensions



Normal features Ball fault features IR fault features OR fault features



Test set

**Training**

RF-dd

KNN-dd

SV-dd

SOM-dd

Parzen-dd

K-Means-dd

K-Centers-dd

Models

Type 2 Error

Runtime

Accuracy

Type 1 Error

**Evaluation**