Three-phase networks

Component
École Nationale Supérieure d'Électrotechnique d'Électronique d'Informatique d'Hydraulique et des Télécommunications

Semester
Printemps

In brief

- **Code:** N6AE04C
- **Open to exchange students:** No

Presentation

Objectives

Provide students with a scientific background to understand the concepts of balanced or unbalanced three-phase sinusoidal systems.

Description

- Determination of the connection of a three-phase load;
- Determination of the voltage drop in a transmission line;
- Determination of the current consumed by a three-phase installation;
- Calculus of the power factor of a three-phase installation and power factor correction;
- Study of harmonic pollution in an installation (filtering);
- Calculus of the current in the neutral in the case of an unbalanced load;

· Determination of the connection and the tap setting of a three-phase transformer;- Calculation of losses in a three-phase transformer.

Pre-requisites

Node laws / mesh laws / generalized Ohm's law;- Single-phase sinusoidal regime;- Vectorial construction; complex notation of a sinusoidal quantity; Fourier series expansion.