Energy Hybridization of Systems

Component
École Nationale Supérieure d'Électrotechnique d'Électronique

In brief

> **Ametys Code:** N9EE35B
> **Open to exchange students:** Yes

Presentation

Objectives

By the end of the course, students will be familiar with hybrid system architectures and the energy/power characteristics of energy sources and storage elements.

They will be able to analyze the mission of an energy system, judge the relevance of its hybridization and design and dimension a hybrid system.

The student will also be able to propose an energy management strategy for a multi-source energy system, taking into account the intrinsic characteristics of the associated sources.

At the end of the course, the student will be able to identify the architectures of the hybrid systems and to know the energy/power characteristics of some sources and energy storage elements.

He will be able to analyze the mission of an energy system, to evaluate the relevance of its hybridization and to design a hybrid system.

The student will also be able to propose an energy management strategy of a multi-source energy system by respecting the intrinsic characteristics of the associated sources.

Description

In addition to theories relating to hybridization and energy management of multi-source systems, the course is based on several examples of hybrid energy systems drawn from the Laplace laboratory's experience in this field of research. These examples relate in particular to the transport sector (aeronautics, rail and road).

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