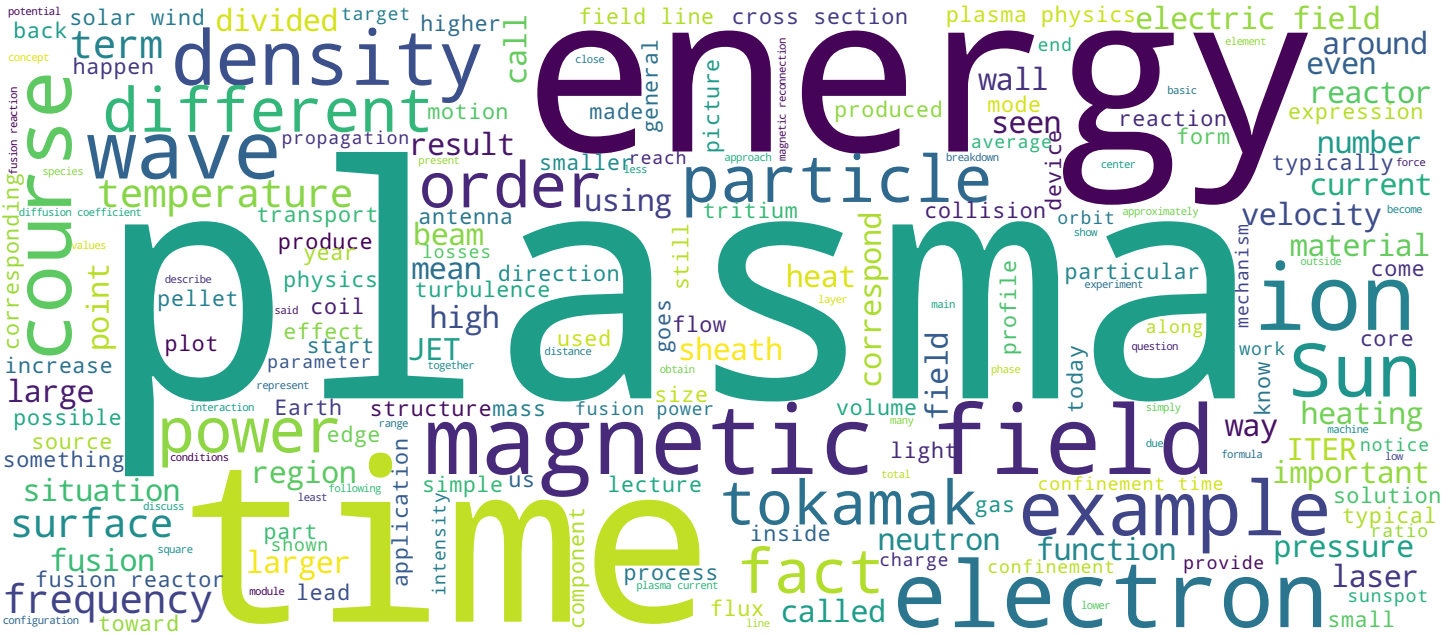
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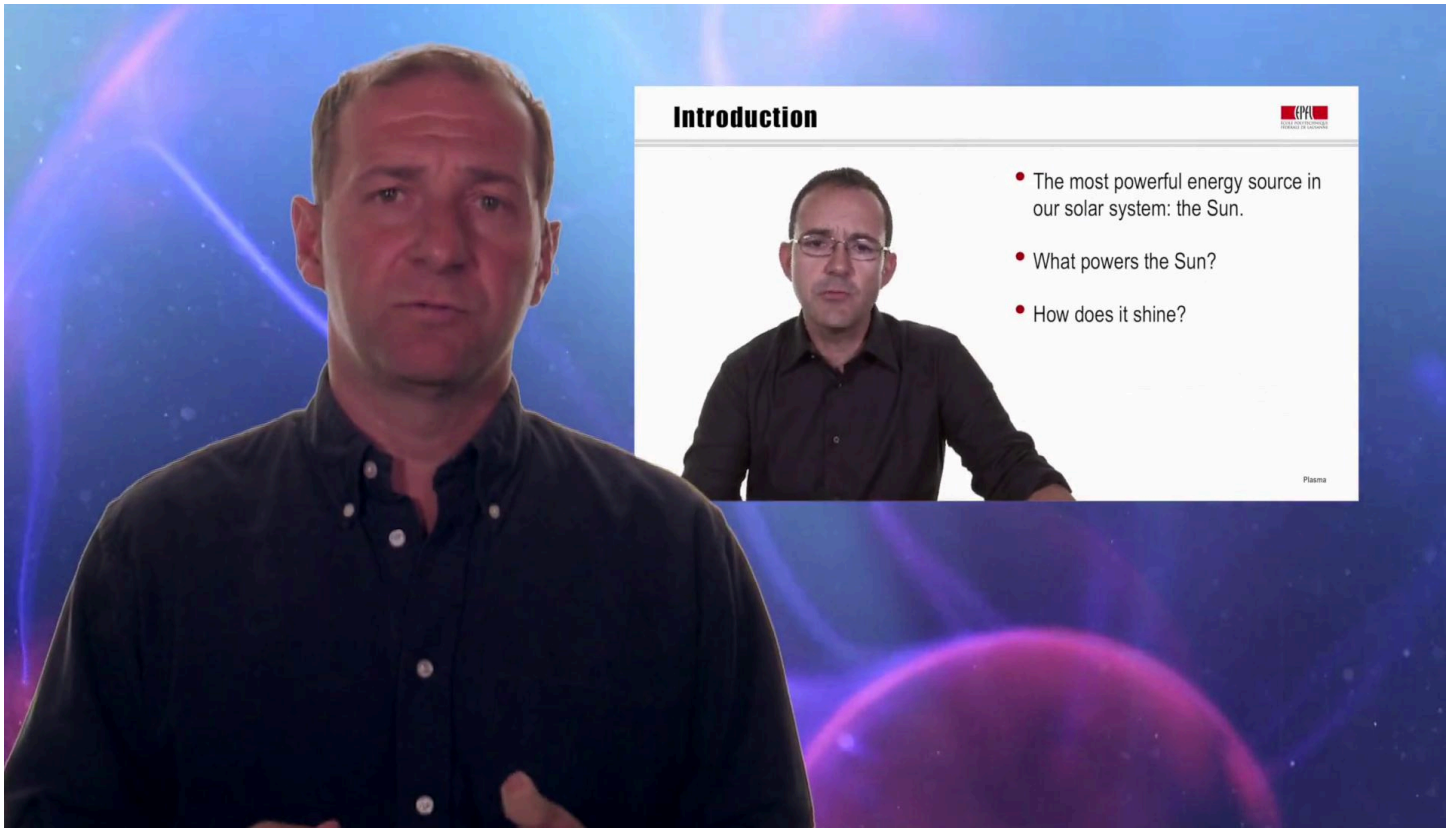

In this module on Plasma Astrophysics we will discover how fusion energy powers our Sun, a nuclear reactor that confines plasma by its own gravitational pull. We will dive into the intricate structure of the solar magnetic field and discover that at its origin is a diamond process that converts energy of the plasma flow into magnetic energy. Magnetic fields are concentrated in three dimensional flux ropes that interact via magnetic reconnection, converting a large fraction of the magnetic field energy into plasma heating and particle acceleration. This, in fact, is at the core of the most powerful events on the Sun, the *corona mass ejections*, which generate spectacular auroras on Earth. Solar wind blows from the hot plasma atmosphere around the Sun, which, although distant from us, shapes the magnetosphere around the Earth. All of these fascinating themes will be discussed using the basics of plasma physics that you have learned in previous modules. A lecture will be given by Dr. Ivo Furno, head of the Basic Plasma Physics and Applications Group at CRPP.

Notes

Summary

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