

Proton fusion reactions under high temperature: Finding a new sun

Thursday, November 14, 2024 10:50 AM (20 minutes)

According to the Big Bang theory, the universe began about 14 billion years ago, and light elements such as hydrogen and helium were created after several minutes of the universe's beginning. Inside the sun, proton fusion reactions under high temperature and high pressure generate 400 YJ (yottajoules, 10^{24} joules) of energy per second, which is about 700,000 times the amount of global energy consumed per year, and only one-2.2 billionth of it reaches the earth's atmosphere. In the view of carbon neutrality and energy challenges, 'plan A' for the first half of the 21st century (2006-2056) and 'plan B' for its second half (2056-2106) are discussed, which were proposed by professors Robert H. Socolow and Stephen W. Pacala at Princeton University. The related innovative energy sources are also discussed.

Paper submission Plan

No

Best Presentation

No

Contribution track

KOPUA

Primary author: Prof. NOH, Seung Jeong (KAPRA / SNU)

Co-author: Dr CHUNG, Bo-Hyun (KAPRA)

Presenter: Prof. NOH, Seung Jeong (KAPRA / SNU)

Session Classification: KOPUA

Track Classification: KOPUA