World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

Condition for Plasma Instability and Stability Approaches

Authors : Ratna Sen

Abstract : As due to very high temperature of Plasma it is very difficult to confine it for sufficient time so that nuclear fusion reactions to take place, As we know Plasma escapes faster than the binary collision rates. We studied the ball analogy and the 'energy principle' and calculated the total potential energy for the whole Plasma. If δ w is negative, that is decrease in potential energy then the plasma will be unstable. We also discussed different approaches of stability analysis such as Nyquist Method, MHD approximation and Vlasov approach of plasma stability. So that by using magnetic field configurations we can able to create a stable Plasma in Tokamak for generating energy for future generations.

Keywords : jello, magnetic field configuration, MHD approximation, energy principle
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020