**COUPLED CHANNEL METHOD WITH ASYMPTOTIC COUPLING FOR HEAVY ION NUCLEAR REACTIONS**

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We have applied the new version of coupled channel method with asymptotic coupling of the exit channels to the computation fusion cross sections and the astrophysical S-factor of sub-barrier and above-barrier reactions to study the deep sub-barrier fusion hindrance phenomenon in [1, 2]. It applied also to study fusion reaction 40Ca+208Pb, leading to the formation of the transfermium nucleus 248No [3]. The results obtained using modified KANTBP 3.1 code [4] and the modified Numerov method in the CCFULL code [5] were compared. For example, see fusion cross sections 64Ni+100Mo and 36S+48Ca in figures.



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