# Abstract

The wealth of data obtained by Hollang et al (1997) for the temperature dependence of CRSS of ultra-high-purity Mo single crystals in the temperature $125 - 460$ K at 15 different strain rates in the range $5.9 \times 10^{-7} - 1.0 \times 10^{-3}$ was analyzed within the framework of the KPN model of flow stress in crystals with high intrinsic lattice friction. The orientation of single crystals used was [941] and the CRSS $(\tau)$ values refer to $(\bar{1}01)$ [111] slip system. The $\tau - T$ curves were divided into two regimes. For a given strain rate, the part of $\tau - T$ curve above $\tau \nleq 233$ MPa was termed as Regime II and the one below this critical stress was named as Regime I. Evaluation of the microscopic parameters of slip helped to identify the deformation mechanism and active slip-system responsible for yielding at temperatures where diffusional processes are dormant.