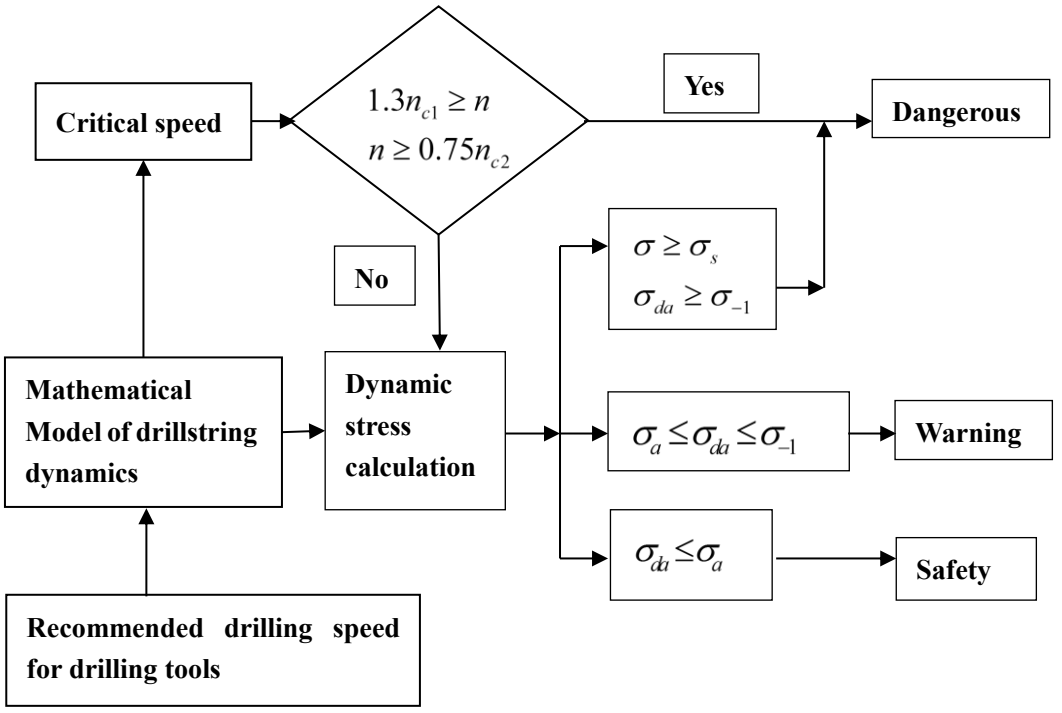
Critical speed
$1.3n_{c1} \geq n$
$n \geq 0.75n_{c2}$
Yes
Dangerous
No
$\sigma \geq \sigma_s$
$\sigma_{da} \geq \sigma_{-1}$
Mathematical Model of drillstring dynamics
Dynamic stress calculation
$\sigma_a \leq \sigma_{da} \leq \sigma_{-1}$
Warning
$\sigma_{da} \leq \sigma_a$
Safety
Recommended drilling speed for drilling tools