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rotational diffusion coefficient

Defined by the equation:

$$D_\theta = \frac{t_\theta}{\frac{\partial(f(\theta, \Phi))}{\partial\theta} \sin\theta}$$

where $f(\theta, \Phi) \sin\theta \, d\theta \, d\Phi$ is the fraction of particles whose axes make an angle between θ and $\theta + d\theta$ with the direction $\theta = 0$, and have an azimuth between Φ and $\Phi + d\Phi$; $t_\theta \, d\Phi$ is the fraction of particles having an azimuth between Φ and $\Phi + d\Phi$ whose axis passes from values $< \theta$ to values $> \theta$ in unit time. The axis whose rotational diffusion is considered has to be clearly indicated.

Source:
PAC, 1972, *31*, 577 *(Manual of Symbols and Terminology for Physicochemical Quantities and Units, Appendix II: Definitions, Terminology and Symbols in Colloid and Surface Chemistry)* on page 617

