The limiting value of the fleet angle of a rope running off a sheave

Abstract:

Based upon specialised experience of rope mechanics spanning over 20 years, this paper reviews the processes of degradation and fatigue that are relevant to hoisting ropes in mines. The review is brought up to date with an account of the most recent work in this field, which identifies a torsional fatigue process and quantifies the impact of degradation upon the residual service life. A proper understanding of these processes is important in determining how different parameters of hoist design and operation interact to determine rope life. This knowledge is also important in informing decisions relating to rope discard based upon observed condition, as well as identifying the critical features that must be quantified reliably during inspection.