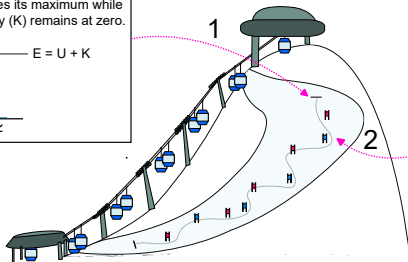
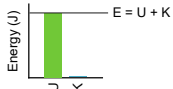


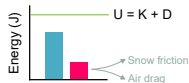
Illustration of mechanical energy in alpine ski racing

a

Skiers accumulate gravitational potential energy as they ascend on the ski lift to the top, where the lift exerts force against gravity to elevate them to the peak. At the course's top, starting from a state of rest, their potential energy (U) reaches its maximum while their kinetic energy (K) remains at zero.



During a turn, a portion of this potential energy is transformed into kinetic energy, while some kinetic energy is dissipated due to forces such as air drag and snow friction (D).



b

Strategies to improve race times on flat slopes in slalom



Stand against



Extend



Rock skis forward



Extend with rock skis forward