Micromechanics of bicrystals with selected grain boundary (GB) types is an effective method of understanding dislocation–GB interactions. Micropillar compression tests on bicrystals containing a coherent twin boundary (CTB) [1,2], show that CTBs act as a weak obstacle for slip transfer unlike general high angle grain boundaries. Perfect slip transmission of dislocations through CTBs has been found to be similar to cross slip in fcc metals, and therefore denotes as cross-slip-like slip transfer [2,3].

In the present study, we extend the argument of perfect slip transfer to multiple closely spaced CTBs investigated on nanotwinned Ag films. Nearly 120 micropillars with CTBs parallel to the loading direction and varying twin spacing were investigated. Perfect slip transfer is observed not only across one CTB, but was also observed at several CTBs down to nanoscale spacing. The reduction in twin spacing results in an increase of the yield strength. The study addresses size scaling due to multiple weak constraints for dislocation motion and underlying deformation mechanisms. Effect of coherent, incoherent twin boundaries is discussed under the condition for strain compatibility and in the view of various material parameters such as stacking fault energy and shear modulus.