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## **Al<sub>3</sub>Sc-Dislocation Interactions at 400°C**

The following videos show dislocation-Al<sub>3</sub>Sc interactions observed during a heating experiment performed *in situ* in the TEM. Thermal stresses arising during heating are the source of the dislocation motion. The sample is an Al-4Mg-0.3Sc alloy with a bimodal distribution of Al<sub>3</sub>Sc consisting of coherent 20 nm particles and semi-coherent 150 nm particles. The interactions shown in these videos are with the latter.

**(DETACH 1, 2, 3, 4)**

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[Attractive Interaction of a Dislocation to a Particle. 673K, 4x speed Figure 2 paper](#)

[Attractive and Repulsive Interaction of Dislocations with a Particle. 15x speed Figure 3 paper](#)

[Dislocation Interactions with a Particle. 4x speed. Figure 4 paper](#)

[Interaction of Low Angle Grain Boundary with a Particle. 8x speed, 673K, Figure 5 paper](#)

[Interaction of Tilt Boundary with a Particle. 673K, 4x speed, Figure 6 paper](#)

[Interaction of a Dislocation with an η-particle. 748K 1/3 x speed, Figure 7 paper](#)