

sumably already governed by the elastic interaction of dislocations and defects and/or other dislocations,  $\delta\sigma/\sigma$  shows no dependence on work hardening. It is not unreasonable to expect, then, that in sufficiently pure material the determination of  $\delta\sigma/\sigma$  in an etch-pit experiment ( $\epsilon_p \simeq 0$ ) would yield values of  $V^*$  considerably larger than found here. Hanafee and Radcliffe<sup>30</sup> have performed etch-pitting experiments on LiF deformed under pressure and find a  $V^*$  of about  $4 V_a$  for both soft crystals and hardened, "doped" crystals. They suggest that dislocation motion in LiF is limited (at  $\epsilon_p \simeq 0$ ) by the formation of interstitials by a climbing jog. However, similar experiments on LiF

<sup>30</sup> J. E. Hanafee and S. V. Radcliffe, *J. Appl. Phys.* **38**, 4284 (1967).

performed at this laboratory<sup>31</sup> give  $V^*$  approximately zero for both hard (irradiated) and soft crystals, a result in accord with the compression experiments.

#### ACKNOWLEDGMENTS

We would like to thank Thomas Blanck for assistance in conducting some of the experiments and Murray Ruggiero for assistance with the high pressure and electronic equipment used, and Professor J. J. Gilman for comments on the interpretation of the results. This research was supported by the U. S. Army Research Office, Durham.

<sup>31</sup> W. L. Haworth, L. A. Davis, and R. B. Gordon, *J. Appl. Phys.* **39**, 3818 (1968), this issue.