

**Meeting:** 1001, Evanston, Illinois, SS 8A, Special Session on Computability Theory and Applications

1001-03-180            **Karen M. Lange\*** (klange@math.uchicago.edu), Department of Mathematics, University of Chicago, 5734 S. University Ave., Chicago, IL 60637. *Degree Spectra of Homogeneous Models.*

Harrington, Goncharov, Nurtazin, Millar, and recently Csima, and others studied the degree spectra of prime models. We consider analogous questions for homogeneous models. Relativizing the conditions for the Goncharov-Peretyat'kin Effective Extension Property, we call a model  $\mathcal{A}$  **d**-uniform if it is countable, homogeneous, the types realized in  $\mathcal{A}$  are all computable, and **d** can list  $\Delta_0$  indices for all types realized in  $\mathcal{A}$ . We fix a nontrivial **d**-uniform  $\mathcal{A}$  and study its degree spectrum. Goncharov, Millar, and Peretyat'kin showed that  $\mathbf{0} \notin dSp^e(\mathcal{A})$  for an arbitrary **0**-uniform  $\mathcal{A}$ .

We prove that for a **0'**-uniform  $\mathcal{A}$ ,  $dSp^e(\mathcal{A})$  always contains a low degree. This implies Csima's *Low Basis Theorem for Prime Models*. We also show that the *nonlow*<sub>2</sub>  $\Delta_2^0$  degrees are **0**-uniform bounding. Finally, we get stronger results in the case when the theory  $T$  of a **0**-uniform model  $\mathcal{A}$  has all types computable. (Received August 24, 2004)