1064-14-100 **Christine Berkesch**, **Daniel Erman**, **Manoj Kummini*** (nkummini@math.purdue.edu) and **Steven V Sam**. *Poset Structures in Boij–Söderberg Theory: II - Supernatural sheaves.*

We look at the partial order of root sequences of sheaves on $\mathbb{P}^{n-1}$ with supernatural cohomology. We show that for two root sequences $f = (f_1, \ldots, f_{n-1})$ and $f' = (f'_1, \ldots, f'_{n-1})$ in $(\{-\infty\} \cup \mathbb{Z})^{n-1}$, $f_i \leq f'_i$ for all i if and only if there exist supernatural sheaves $\mathcal{F}, \mathcal{F}'$ of type f and f', respectively, such that $\operatorname{Hom}(\mathcal{F}', \mathcal{F}) \neq 0$. We will also look at equivariant versions of these theorems. (Received September 01, 2010)