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Uniqueness of Lifts of Specht Modules in the Symmetric Group.

Recently Fayers has proven a combinatorial condition on partitions that classifies exactly when the Specht module associated to that partition remains irreducible modulo some odd prime p . In this note we show that a uniqueness condition holds as well. More specifically, if p is an odd prime and λ and σ are partitions of n such that $S^\lambda \cong S^\sigma$, and both are irreducible as modules over \mathbb{F}_p , then $\lambda = \sigma$. A more general result in this direction is known. However, we will discuss a method that builds on the methods of Fayers, and look at some related combinatorial questions. (Received December 15, 2006)