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Sheila Sundaram* (shsund@comcast.net), Pierrepont School, One Sylvan Road North, Westport, CT 06880. *Variations on the S_n -module Lie_n : results and conjectures*. Preliminary report.

For each prime q , we define an S_n -module $Lie_n^{(q)}$ which allows us to establish the Schur-positivity of the sum of power-sum symmetric functions indexed by partitions λ whose parts are (a) all powers of a fixed prime q , or (b) all relatively prime to a fixed prime q . These results are generalised by replacing the prime q with an arbitrary subset S of primes. The representations $Lie_n(q)$ admit simple descriptions in terms of the Lie module, and are also related to the conjugacy action on the long cycles of S_n . These constructions lead to new conjectures on Schur-positivity. (Received September 23, 2017)