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Cohomology of symmetric and alternating groups

We present the mod-two cohomology of symmetric and alternating groups as (almost) Hopf rings under both cup product and a second product given by induction/transfer. This presentation in particular determines the additive and cup product structures of individual groups. In addition to this almost Hopf ring structure, which is present in the cohomology or representation theory of series of finite groups with suitable embeddings $G_i \times G_j \to G_{i+j}$, we employ Fox-Neuwirth resolutions, which also arise in the study of (∞, n) categories.