Presentations of Semigroups of Order-Preserving Partial Injections on a Finite Set (joint talk with Apatsara Sareeto)

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Presentations of semigroups of transformations is a classical problem in Semigroup Theory. In 1887, Moore has given a presentation for the symmetric group S_n. In 1958, Aĭzenštat has provided a presentation for the symmetric semigroup T_n. Presentations for some monoids of transformations on a finite chain where given by Fernandes et.al. in 2005. The monoid POI_n of all injective order-preserving transformations on an n-element chain has been a object of study (for example by Fernandes). We consider a submonoid $POFI_n^{par}$ consisting of all transformations in POI_n preserving both the parity and the zig-zag order $1 < 2 > 3 < \cdots > n < 1 < n$ (for even natural number n). We provide a presentation for $POFI_n^{par}$ in $3n-4$ generators and several classes of relations. In particular, we will point out the idea of the proof.