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Partial variational principle for groups of polynomial growth

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We generalize the notion of topological pressure to the case of a finitely generated group of continuous maps and introduce group measure entropy. Also, we provide an elementary proof that any finitely generated group of polynomial growth admits a group invariant measure and show that for a group of polynomial growth its measure entropy is less than or equal to its topological entropy. The dynamical properties of groups of polynomial growth are reflected in dynamics of some foliated spaces. The result generalizes the variational principle for an abelian semigroup action obtained by M. Misiurewicz, *A short proof of the variational principle for a \mathbb{Z}_+^N action*, Bull. de l'Academie Polonaise des Sciences **24**, No.12, (1976), 1069–1075.