

# A Generalization of Weinstein's Morphism

Andrés Pedroza

In 1989, A. Weinstein introduced a morphism

$$\mathcal{A}: \pi_1(\mathrm{Ham}(M, \omega)) \rightarrow \mathbb{R}/\mathcal{P}_2(M, \omega),$$

defined via the action functional of Hamiltonian diffeomorphisms. Here,  $\mathrm{Ham}(M, \omega)$  denotes the group of Hamiltonian diffeomorphisms of the symplectic manifold  $(M, \omega)$ .

In this talk, we present a generalization of Weinstein's morphism to higher homotopy groups:

$$\mathcal{A}: \pi_{2k-1}(\mathrm{Ham}(M, \omega)) \rightarrow \mathbb{R}/\mathcal{P}_{2k}(M, \omega),$$

for all  $1 \leq k \leq n$ . As an application, we show that the groups  $\pi_{2k-1}(\mathrm{Ham}(\widetilde{\mathbb{C}P}^n, \tilde{\omega}_\rho))$  contain an element of infinite order.