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Directions of Hamiltonian Dynamics and Celestial Mechanics

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ABSTRACT. Hamiltonian Systems and Celestial Mechanics have enjoyed a renaissance in the last two decades due to new techniques and concerns from dynamical systems. At an informal meeting during the AMS-IMS-SIAM Joint Summer Research Conference held at the University of Washington in Seattle from June 25 to June 29, 1995, participants were asked to suggest directions of research in these fields. This is a summary of the philosophies, problems and conjectures presented.

1. Richard Cushman

First, consider the diagonal action

$$\Psi : SO(n) \times (\mathbb{R}^n)^p \to (\mathbb{R}^n)^p$$
$$\Psi\ (A, (x_1, x_2 ... x_p)) = (Ax_1, Ax_2, ... Ax_p)$$

of $SO(n)$ on p copies of $\mathbb{R}^n$. Look at its orbit space $(R^n)^p/SO(n)$.

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