

Peer Review

Review of: "Multidimensional Soliton Systems: an Update"

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This manuscript is a concise, timely update to a recent review on multidimensional solitons in nonlinear optics and atomic Bose–Einstein condensates (BECs). It highlights selected experimental advances and theoretical developments. The intent is to provide a compact roadmap to very recent results and directions.

The update aggregates several genuinely new lines of inquiry, and the manuscript captures the emerging role of PINNs for nonlinear wave dynamics as a practical addition to the analytical/numerical toolbox in this area.

The paper points to a recent Physical Review Letters article reporting the dynamical formation of multiple quantum droplets via Plateau–Rayleigh-like instability, and it appropriately distinguishes linear from truly self-trapped nonlinear structures, cautioning against conflating the two.

The narrative is compact and well signposted, offering a navigable path through a broad literature with judicious figure examples. The references are recent and largely appropriate, directing readers to detailed sources for each topic.

The selected advances collectively reflect the rapid growth of the field and help to situate current open problems. The update will be useful to researchers seeking a quick orientation to the most recent

theoretical and experimental trends.

Declarations

Potential competing interests: No potential competing interests to declare.