I appreciate the authors' detailed responses to the reviewer comments and the revisions made to the manuscript. The authors have addressed the major concerns satisfactorily and have improved the clarity, transparency, and presentation of the proposed modeling framework.

The manuscript presents a technically sound and scientifically meaningful contribution to the field of physics-informed hydrological modeling. The integration of Kolmogorov–Arnold Networks, residual compensation, attention mechanisms, and physics-informed constraints for Arctic river discharge prediction represents a novel and promising direction. The methodological development and application to snowmelt-driven hydrological processes provide clear value to the community and align well with the scope of Hydrology and Earth System Sciences (HESS).

While the revised manuscript is suitable for publication, I note that there remains scope for further methodological refinement in future studies. In particular:

1. **Specification and systematic treatment of initial physical conditions** (e.g., initialization of state variables such as snow storage and melt) could be explored in greater depth, including sensitivity analysis to different initialization strategies or the field values.
2. **Quantitative analysis of the contribution of individual loss components to model convergence** (e.g., decomposition of physics-based and data-driven loss terms across training epochs) would provide additional insight into the optimization dynamics and the mechanistic role of physics-informed constraints.

These aspects do not diminish the validity or significance of the present work but represent natural extensions that could further strengthen the interpretability and robustness of physics-informed machine learning models in hydrology.

Based on the revisions provided and the overall scientific contribution of the study, I recommend acceptance of the manuscript for publication.