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Simple smoothness indicator and multi-level adaptive order WENO scheme for hyperbolic conservation laws

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Highlights

- We build an efficient smoothness indicator for fifth order scheme by utilizing indicators of third order scheme, that is consistent with the exact indicator.
- The simple indicator is used to build the WENO-AON(5,3) scheme which shows comparable performance to existing schemes while being less costly.
- We propose an adaptive order WENO-AO(5,4,3) scheme which blends quartic, cubic and quadratic polynomials, and shows improved resolution of complex flow features.

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