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Jarod Hart and **Virginia Naibo*** (vnaibo@math.ksu.edu), Kansas State University,
Mathematics Department, 138 Cardwell Hall, Manhattan, KS 66506. *On certain commutator
estimates for vector fields.*

We present a unifying approach for proving certain commutator estimates for smooth, not-necessarily divergence-free vector fields and implement it in the scales of weighted Triebel-Lizorkin and Besov spaces and variable exponent Triebel-Lizorkin and Besov spaces. Such commutator estimates are motivated by the study of well-posedness results for some models in incompressible fluid mechanics. (Received January 25, 2017)