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Modulation of Gulf Stream Surface–Subsurface Frontal Separation by Path Curvature

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ABSTRACT

Observations of surface–subsurface frontal separation have inconsistently demonstrated a relationship between surface–subsurface frontal separation and subsurface-front path curvature. An analytical model of surface–subsurface frontal shows that this separation is modulated by curvature of the path of the subsurface front, and that the strength of this modulation is approximately proportional to the surface–subsurface frontal separation. A comparison of the theory with observations shows agreement.

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