



Session 01

Dynamical functioning of the southern Senegal upwelling as a new explanation of small pelagic spawning pattern

**Siny NDOYE^{1,2,*}, Xavier CAPET², Philippe ESTRADE¹, Timothee BROCHIER^{3,4}, Eric MACHU⁵,
Patrice BREHMER^{3,4} and Amadou T. GAYE¹**

¹Université Cheick Anta Diop (UCAD), Laboratoire de Physique de l'Atmosphère et de l'Océan Siméon (LPAO-SF), BP 5085, Dakar–Fann, Senegal

²Centre National de la Recherche Scientifique (CNRS), Laboratoire d'Océanographie et du Climat: Expérimentations et Approches Numériques (UMR LOCEAN), Paris, France

³Institut Sénégalais de Recherches Agricoles (ISRA), Centre de Recherche Océanographique Dakar-Thiaroye (CRODT), BP 2241-Dakar, Senegal

⁴Institut de Recherche pour le Développement (IRD), UMR Lemar, BP 1386, Dakar, Sénégal

⁵Institut de Recherche pour le Développement (IRD), UMR LOPS, BP 1386 Dakar, Sénégal

*Correspondance: Tél: (+221) 77 27 07 806; Courriel: siny.ndoye@locean-ipsl.upmc.fr (S. NDOYE)

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Abstract

Off Southern Senegal is situated a peculiar upwelling sector characterised by a major coastline irregularity in its northern part (the Cape-Verde peninsula) and a wide continental shelf further South. The southern Senegal coastal ocean plays a major role for the ecosystem. Its dynamical functioning is investigated using ROMS numerical simulations at horizontal resolution $\sim 2\text{km}$, i.e. resolving fine-scale details of the frontal system present over the continental shelf during the upwelling season. The presence of Cape-Verde peninsula in the North exerts a major influence over the mesoscale activity, Ekman coastal divergence and upwelling patterns, and more generally over the pathways followed by cold subsurface water feeding the coastal divergence. Our dynamical analysis offers important insight into the spawning patterns observed in the region, *e.g.* during the recent AWA field experiments. The Hann Bight offers a spawning area with favorable properties in terms of retention and presumably food.

Keywords: ROMS, numerical simulations, fine-scale details, frontal system mesoscale activity, Ekman coastal divergence, AWA field experiments, Hann Bight.



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