

On the warm nearshore bias in Pathfinder monthly SST products over Eastern Boundary Upwelling Systems

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Abstract

Using in situ sea surface temperature (SST) data and MODIS/TERRA SST, the monthly AVHRR Pathfinder (version 5.0 and 5.2) SST product was evaluated within the four main Eastern Boundary Upwelling Systems. A warm bias in the monthly Pathfinder data (previous to version 5.2) was systematically found during summer months in nearshore regions where high SST gradients exist. Based on a climatological average spanning 2000–2009, this summertime bias reached up to 3–5 °C in the California, Humboldt, Canary, and Benguela Upwelling Systems. This warm bias could at least partly explain the cold bias often found in numerical models of coastal upwelling. The last release of Pathfinder (version 5.2, September 2011) clearly improved the bias found on the previous Pathfinder version.