

# R: Surface wind stress biases in the Southern Ocean

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## Objective

ACME (and CESM) overestimate the surface wind stress in the Southern Ocean.

We investigate the impact of orographic and frontal gravity waves (GW) on this bias.

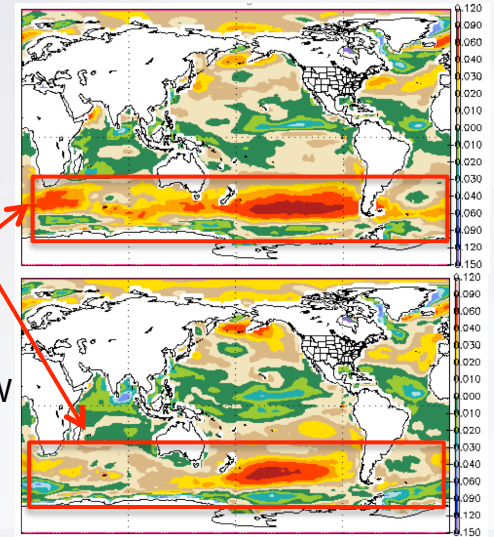
We significantly improve the wind stress bias.

## Wind stress biases (compared Large-Yeager)

Control run

*Improved biases*

Tuning of orographic GW



## Tuning knobs

**taubgnd** is the momentum flux launched at source level by the frontal GW scheme

**effgw\_oro** is the efficiency of orographic GW. We adjust it in Southern Hemisphere (SH).

	taubgnd	effgw_oro
Control run	2.5e-3	0.4
taubgnd x 10	2.5e-2	0.4
effgw_oro_SH x 4	2.5e-3	0.4 (NH), 1.6 (SH)
effgw_oro_SH x 4 taubgnd x 0.4	1.0e-3	0.4 (NH), 1.6 (SH)