

# Supplementary material

## Oceanographic Processes Favoring Deoxygenation Inside Patagonian Fjords

Pamela Linford<sup>1,2</sup>, Iván Pérez-Santos<sup>2,3,4,\*</sup>, Paulina Montero<sup>3,4</sup>, Patricio Díaz<sup>2,5</sup>, Claudia Aracena<sup>6,7</sup>, Elías Pinilla<sup>8,13</sup>, Facundo Barrera<sup>2,9,10</sup>, Manuel Castillo<sup>11</sup>, Aida Alvera-Azcárate<sup>12</sup>, Mónica Alvarado<sup>13</sup>, Gabriel Soto<sup>8</sup>, Cécile Pujol<sup>12</sup>, Camila Schwerter<sup>2</sup>, Sara Arenas-Uribe<sup>2</sup>, Pilar Navarro<sup>2</sup>, Guido Mancilla-Gutiérrez<sup>2</sup>, Robinson Altamirano<sup>2</sup>, Javiera San Martín<sup>7</sup>, Camila Soto-Riquelme<sup>8</sup>.

<sup>1</sup>Programa de Doctorado en Ciencias, Mención Conservación y Manejo de Recursos Naturales, Universidad de Los Lagos, Puerto Montt, Chile.

<sup>2</sup>Centro i-mar, Universidad de Los Lagos, Casilla 557, Puerto Montt, Chile.

<sup>3</sup>Center for Oceanographic Research COPAS Sur-Austral and COPAS COASTAL, Universidad de Concepción, Chile.

<sup>4</sup>Centro de Investigación en Ecosistemas de la Patagonia (CIEP), Coyhaique, Chile.

<sup>5</sup>CeBiB, Universidad de Los Lagos, Casilla 557, Puerto Montt, Chile.

<sup>6</sup>Centro de Investigación en Recursos Naturales y Sustentabilidad, Universidad Bernardo O'Higgins, Avenida Viel 1497, Santiago, Chile.

<sup>7</sup>Laboratorio Costero de Recursos Acuáticos de Calfuco, Universidad Austral de Chile, Valdivia, Chile.

<sup>8</sup>Instituto de Fomento Pesquero (IFOP), CTPA-Putemún, Castro, Chile.

<sup>9</sup>Centro de Ciencia del Clima y la Resiliencia (CR2), Universidad de Chile, Chile.

<sup>10</sup>Centro Austral de Investigaciones Científicas (CADIC), CONICET, Bernardo Houssay 200, Ushuaia, Argentina.

<sup>11</sup>Centro de Observación Marino para estudios de riesgos del ambiente Costero, Universidad de Valparaíso, Chile.

<sup>12</sup>AGO-GHER, University of Liège, Belgium.

<sup>13</sup>Servicio Hidrográfico y Oceanográfico de la Armada de Chile.

<sup>14</sup>Department of Civil and Environmental Engineering, University of Maine, 5711 Boardman Hall, Orono, ME, USA.

*Correspondence to:* I. Pérez-Santos ([ivan.perez@ulagos.cl](mailto:ivan.perez@ulagos.cl)), <https://orcid.org/0000-0002-0184-1122>.

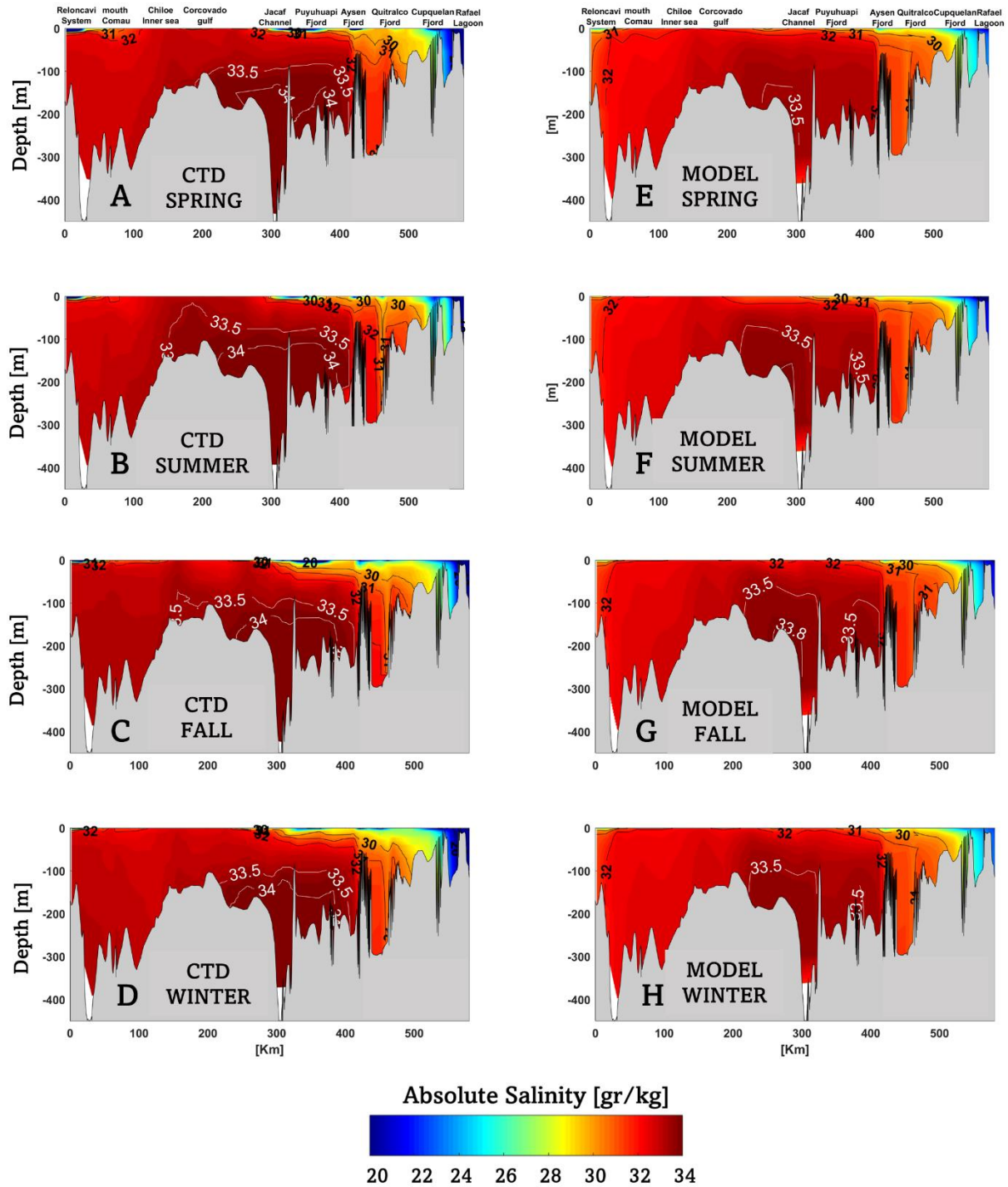


Figure S1. Absolute salinity (g/kg) along northern region of Patagonian fjords for CTD Stations (A, B, C, D) during oceanographic expeditions (2020 to 2021) and seasonal mean (2020–2021) for hydrodynamic model (E, F, G, H). Left

panel (CTD) and right panel (model) showed good agreement, higher salinity ( $>33$  gr/kg) associated with SAAW and ESSW ocean waters, entering the deep layer of the Guafo mouth, crossings the Corcovado Gulf, and ends its travel at the deep layers of the Puyuhuapi Fjord and Jacaf Channel. A decrease in salinity due to ice melting from the San Rafael Lagoon is also seen, which indicates the presence of estuary water (EW).