



Response of the Indonesian ThroughFlow to the Global Warming

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The response of the Indonesian Through Flow to the global warming is investigated using four climate models utilized in the IPCC AR4. In all cases, the ITF weakens as the global warming progresses. To find the cause of this weakening, we also estimated ITF transport using the Island Rule in each model. In any case, the ITF from the island rule is mainly governed by the wind stress along the zonal line connecting the southern tip of Australia and the South America. The weakening of the trade along the equator cannot explain the weakening of the directly estimated ITF from the models in the island rule. The integral of the wind stress along this zonal line does not yield consistent response to the global warming. Thus unlike the directly calculated ITF, the island rule does not yield consistent results.