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Oceanic heat flow through Fram Strait and Arctic Ocean warming

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The West Spitsbergen Current transports warm Atlantic water through Fram Strait to the Arctic Ocean. The involved oceanic heat transport can not be derived straight forward. Assuming a stream tube in Fram Strait with net zero volume flux the heat flux can be estimated from a ten years time series of mooring measurements. The heat flux varies from about 30 TW in the late nineties to 40 TW in the mid 2000s. The additional amount of heat (10TW for 4 years) is compared to the warming observed during several cross basin expeditions in the past decade in the Eurasian Arctic. The warming in the Eurasian Basin is found to explain 60% of the increased heat inflow through Fram Strait.