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Recent global warming hiatus dominated by low latitude temperature trends in surface and troposphere data

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Over the last 15 years, global mean surface temperatures exhibit only weak trends. Recent studies have attempted to attribute this so called temperature hiatus to several causes, amongst them incomplete sampling of the rapidly warming Arctic region. We here examine zonal mean temperature trends in satellite-based tropospheric data sets (MSU/AMSU and GNSS Radio Occultation) and in global surface temperatures (HadCRUT4). Omission of successively larger polar regions from the global-mean temperature calculations, in both tropospheric and surface data sets, shows that data gaps at high latitudes cannot explain the observed differences between the hiatus and the pre-hiatus period. Instead, the dominating causes of the global temperature hiatus are found at low latitudes. The combined use of several independent data sets, representing completely different measurement techniques and sampling characteristics, strengthens the conclusions.