



What do we really know about cloud changes over the past decades?

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Clouds are a crucial component of the Earth's climate system. However, cloud amount, percentages and their interaction with aerosols are difficult to model. Here, we undertake a detailed study of cloud type trends and the reliability of the two global available cloud datasets, ISCCP and MODIS. We find that ISCCP long-term records are unreliable and unsuitable for continuous time-series based scientific studies. While MODIS presents a much more stable time-series of total and high level clouds, middle and low level cloud time-series are probably not correct, as they are strongly affected by artificial trends introduced by the satellite viewing geometry. We conclude that a truly comprehensive and global time-series of cloud properties with sufficient accuracy for climate change studies is still not available to the community, and it is not known with any reliability how global cloud properties have changed prior to, or during the satellite-era.