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## Changes in cloudiness in the U.S. from surface observations

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Cloudiness is an important climate variable for detection of climate change, understanding climate feedbacks, and evaluation of climate models. Since clouds are a major determinant of surface solar radiation, changes in cloud cover also have implications for future solar energy development. Current cloud datasets from satellites and human visual observations do not agree on some major aspects of long-term variability. Resolving these differences requires closer attention to data homogeneity issues. For surface-based observations, these issues are especially complex in the U.S. because of the effects of the introduction of ASOS in the early 1990s and have not yet been addressed thoroughly. We will present a new analysis of U.S. cloud cover since 1949 based on surface observations from the Integrated Surface Hourly database. We use stations that have maintained human observations of cloud cover at least past the early 2000s. Unadjusted data have trends in total cloud of 1-2 percent per decade, but preliminary results after homogeneity adjustments show smaller increases. We will compare these results to satellite data and other related climatological information such as diurnal temperature range and precipitation.