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Clouds caused by human activities: the anthropoclouds

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The classification of clouds is based on the pioneering classification carried out by Howard (1804). In this classification, and also in the successive editions of the International Classification of Clouds published by the World Meteorological Organization (WMO, 1975, 1987) 10 basic cloud genera are included and described. In all cases, the cause that leads to the formation of clouds remains as a secondary issue. It is assumed that all of them are exclusively produced by natural mechanisms without any human intervention. However, aerosol and water vapour emissions produced by human activity may increase cloud formation having an increasing importance in the atmospheric energy budget and consequently in the earth's climate. Effectively, since the end of the Nineteenth century, human activity has been injecting large amounts of water vapour into the atmosphere, cloud condensation nuclei and hot air mainly generated in the combustion processes that under certain spatial and temporal conditions can enhance cloud formation. These anthropogenic aerosols are linked to the climate and the water cycle (Kaufman et al, 2002).
The aim of this communication is to point out the anthropic origin of some clouds in the cloud classification. Several cases of the 7 basic genera cloud caused by human activities will be shown to discuss the importance of differentiating the origin of clouds in weather observations. This differentiation would improve the understanding the contribution of these clouds to climate change.

To differentiate the clouds formed by human activity, we propose to use the prefix anthropo- before the scientific name (and a- before the abbreviation) in some of the 10 basic clouds defined by the International Classification of Clouds, those which could have an anthropic origin, and thus begin new data of cloud observations that could help future research to improve the effect of human activity in the troposphere.