

Cloud streets

G.P. Können, Terschelling Diary 2007/1

When you know about them, you can't miss them: cloud streets. They occur in coastal regions if the wind blows from sea. They consist of individual cumulus clouds, which are organized in parallel lines or streets. The distance between two streets is typical 1.5 km. On the Frisian island Terschelling, where I spend a few weeks any year, I usually spot such streets a few times during each stay. They occur there during south-western wind, that is when the wind direction is parallel with the island. Over Terschelling, about 4 km wide, there are usually three of these streets; between them the sky is clear. If you are unlucky enough, such a street keeps you many hours out of the sun. Over the sea there are no clouds at all.



If you recognize a clouds street, it worth while to search for its starting point, which is of course upstream. This starting point displays a beautiful dynamics: continuously a new 'first cloud' is formed, which is then transported land inward by the wind. These 'first clouds' seem to emerge out of nothing. Downstream one can observe that the street dies out where it happens to arrive over sea.

Cloud street and its starting point over the Dutch island Terschelling, photographed on 30 June 2008 by G.P. Können

A clouds street is formed in an unstable and moist air mass from the sea, in which the air temperature is lower than the seawater temperature. When it has arrived over land, it may pass a spot that has heated up by solar radiation to a higher temperature than the air. This forces the air to ascend, during which cloud formation occurs. Next to a cloud street the air is descending and the sky is clear; next to that region the air ascends again and a second street is formed. From satellites the streets resemble smoke plumes which are blown land inward by the wind. Near the west coast of the Netherlands there may appear a large number of parallel streets. They are completely stationary, as their position drifts, together with that of the hottest spot, slowly north or southward along the coast. This does not happen on an island like Terschelling, where the elongated shape and small width of the island firmly pins the position of the streets down.

'If you are ignorant of something, you will fail to see it' – see the first line of this article.

The existence of cloud streets is only 'recognized' for about 40 years, and this only happened when they showed up so clearly in images taken from weather satellites that they could not be overlooked any more. Every time when I look at the cloud streets, I am surprised that we, human beings, can be so blind for the obvious. I have no doubt that much more clear effects are hidden in Nature, just waiting for a first keen observer to be discovered!