Leewellen-Wolken
ihren Formen und ihren Ursachen

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Wellenwolken koennen sehr truegerisch sein und sind oft nicht das,was sie zu sein scheinen. Um dieses Problem zu loesen, habe ich einige einfache Modelle erstellt, die helfen koennen, sie zu erklaeren.

Wie jedoch von Joerg Dummann zitiert:-
"Alle Modelle sind falsch, aber einige sind nuetzlich."
George E. P.Box (1979)

Abb. 1 SA Stueve Diagramm

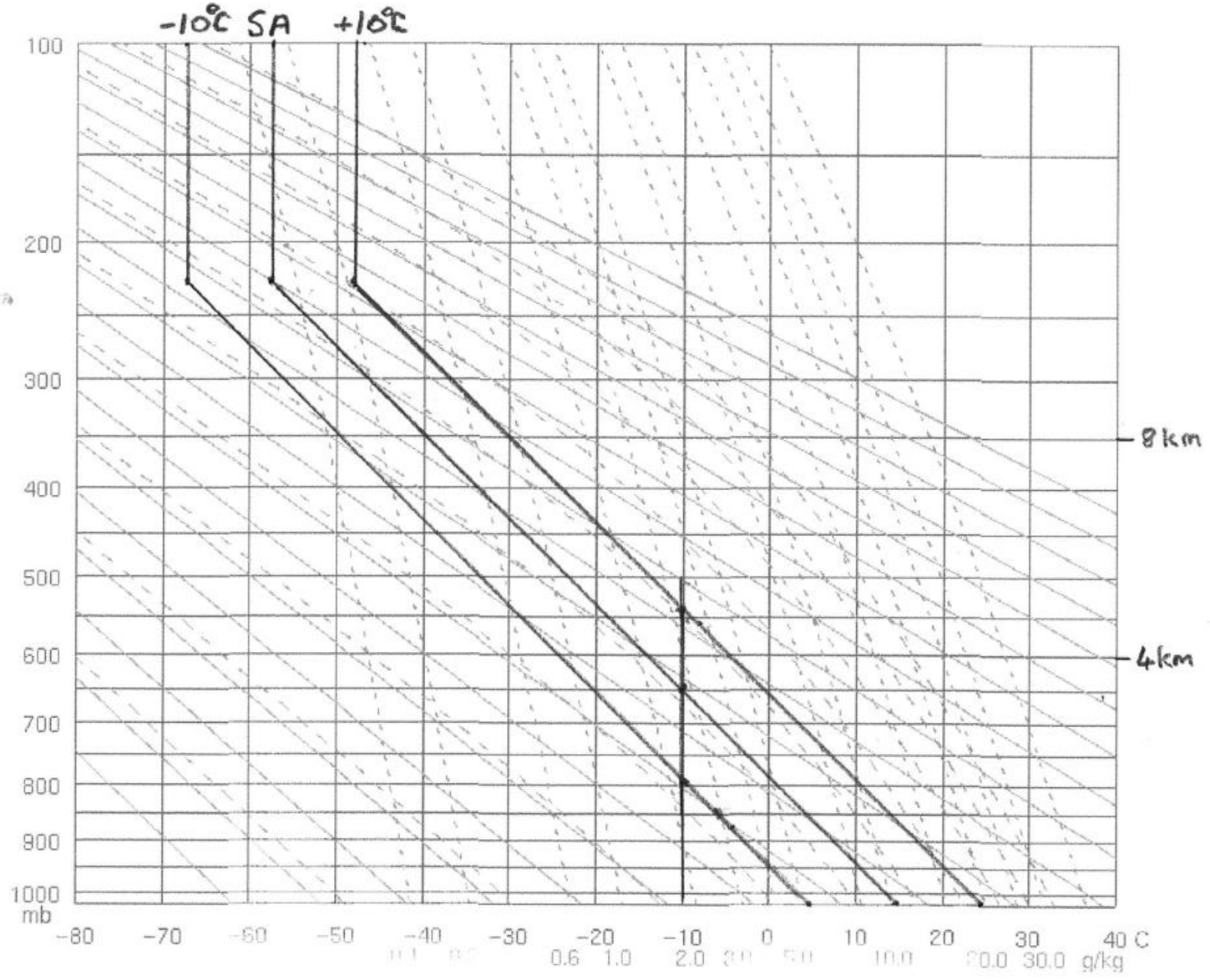


Abb. 2 Stueve Diagramm

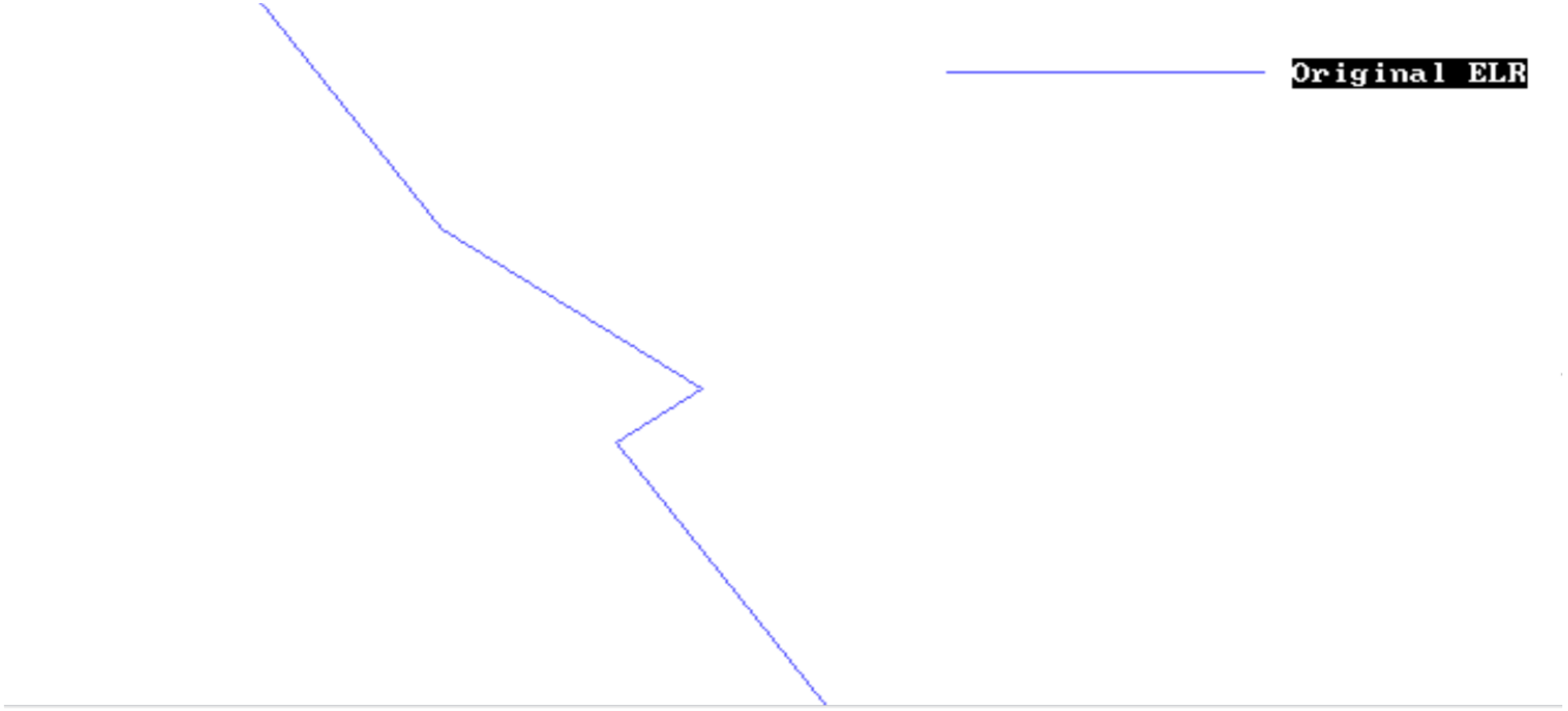


Foto 1 Konvektive Winter Wellen-Wolken

Foto 2 Konvektive Wellen-Wolken

Foto 3 Stabile Wellen-Wolken

Abb. 2 Stueve Diagramm

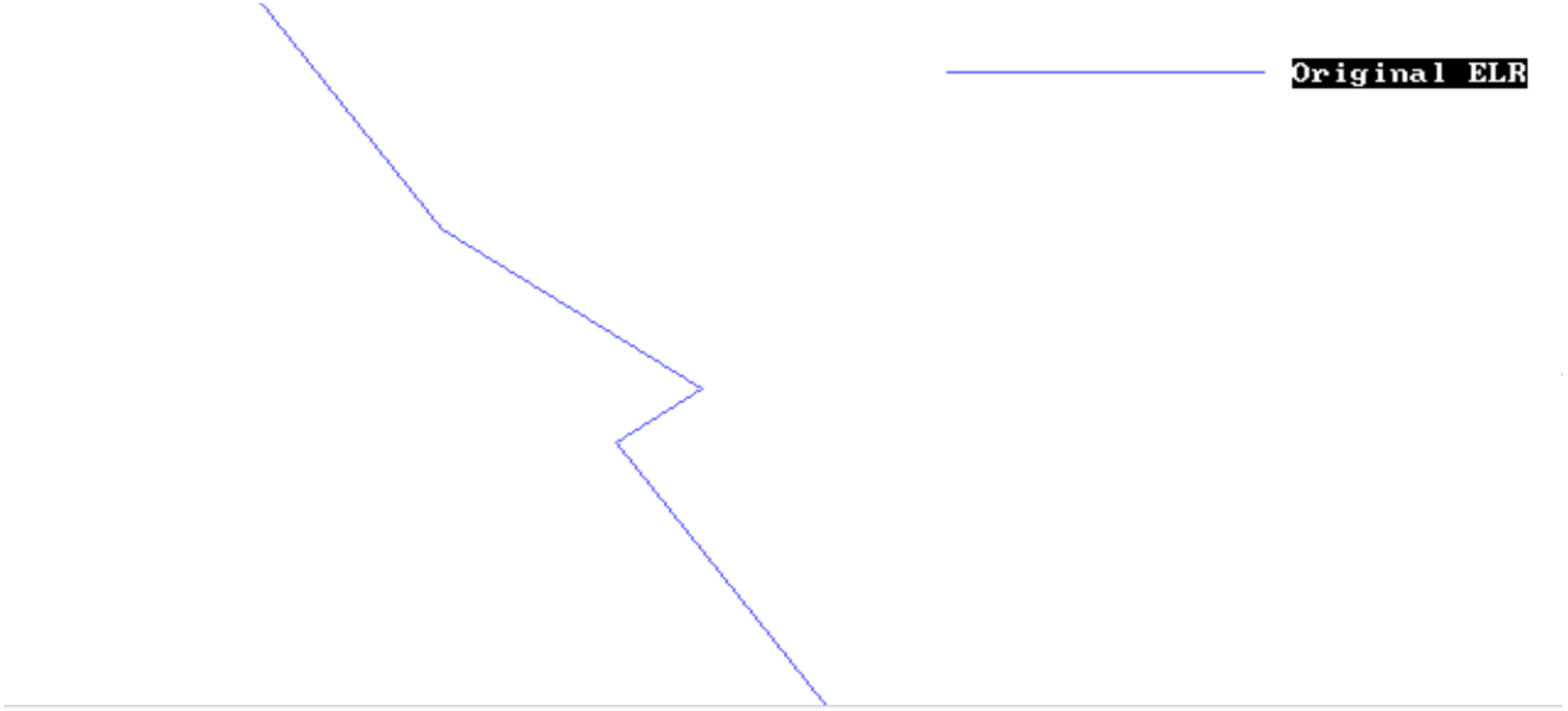


Foto 4 Altocumulus castellanus

Foto 5 Klein Castellanus-Wolken

Foto 6 Cumulus Castellanus Wolken

Abb. 2 Stueve Diagramm

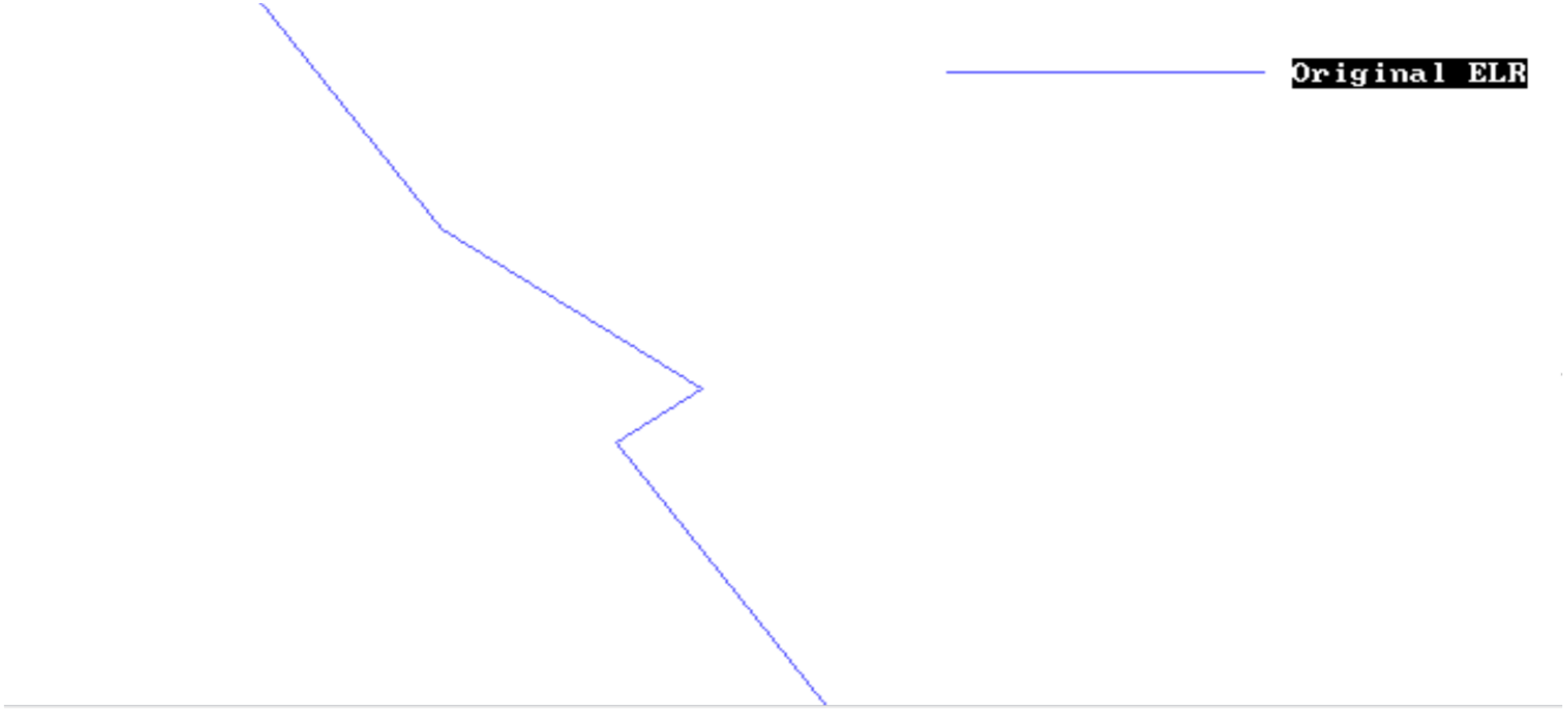


Abb. 3 Stueve Diagramm 2

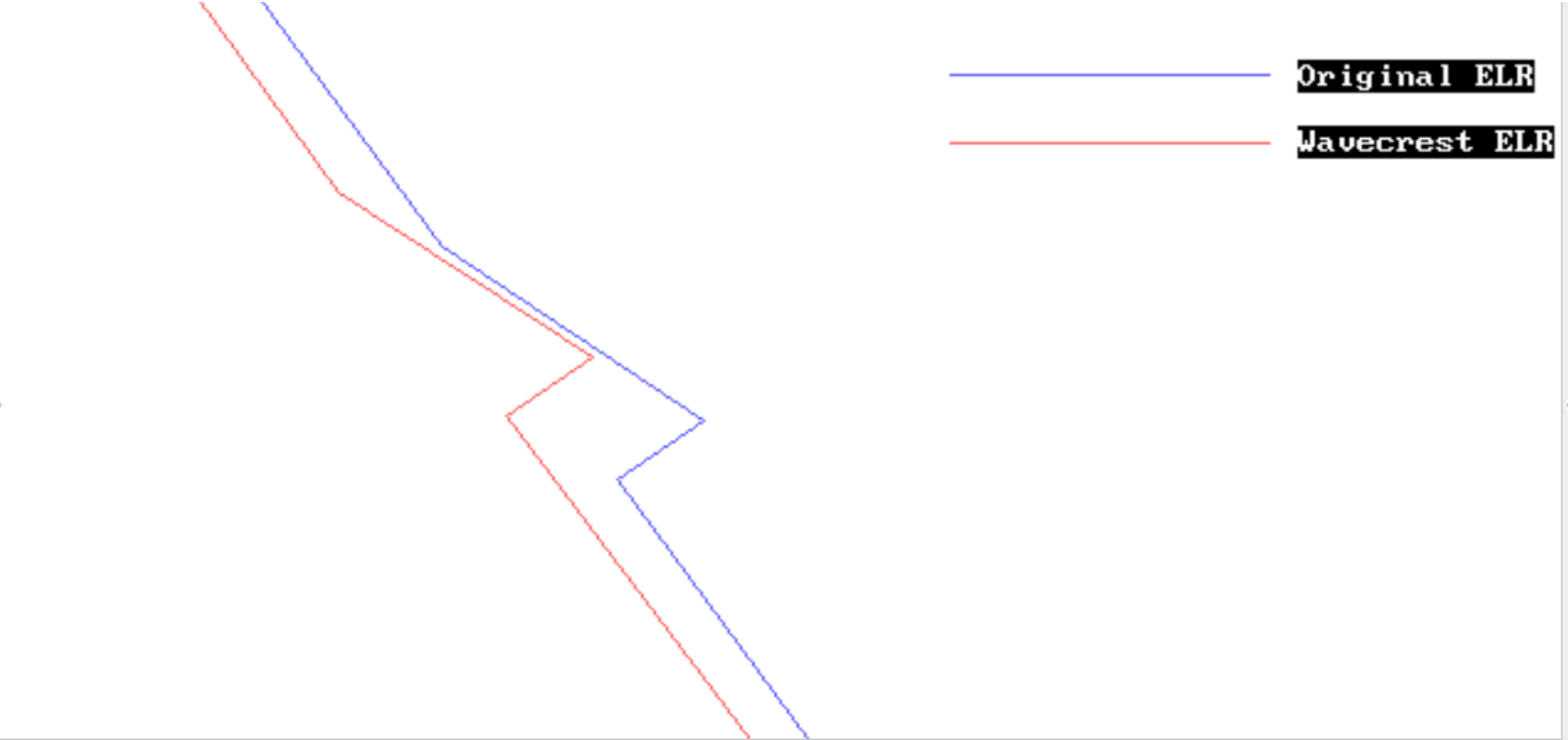


Abb. 4 Stueve Diagramm 3

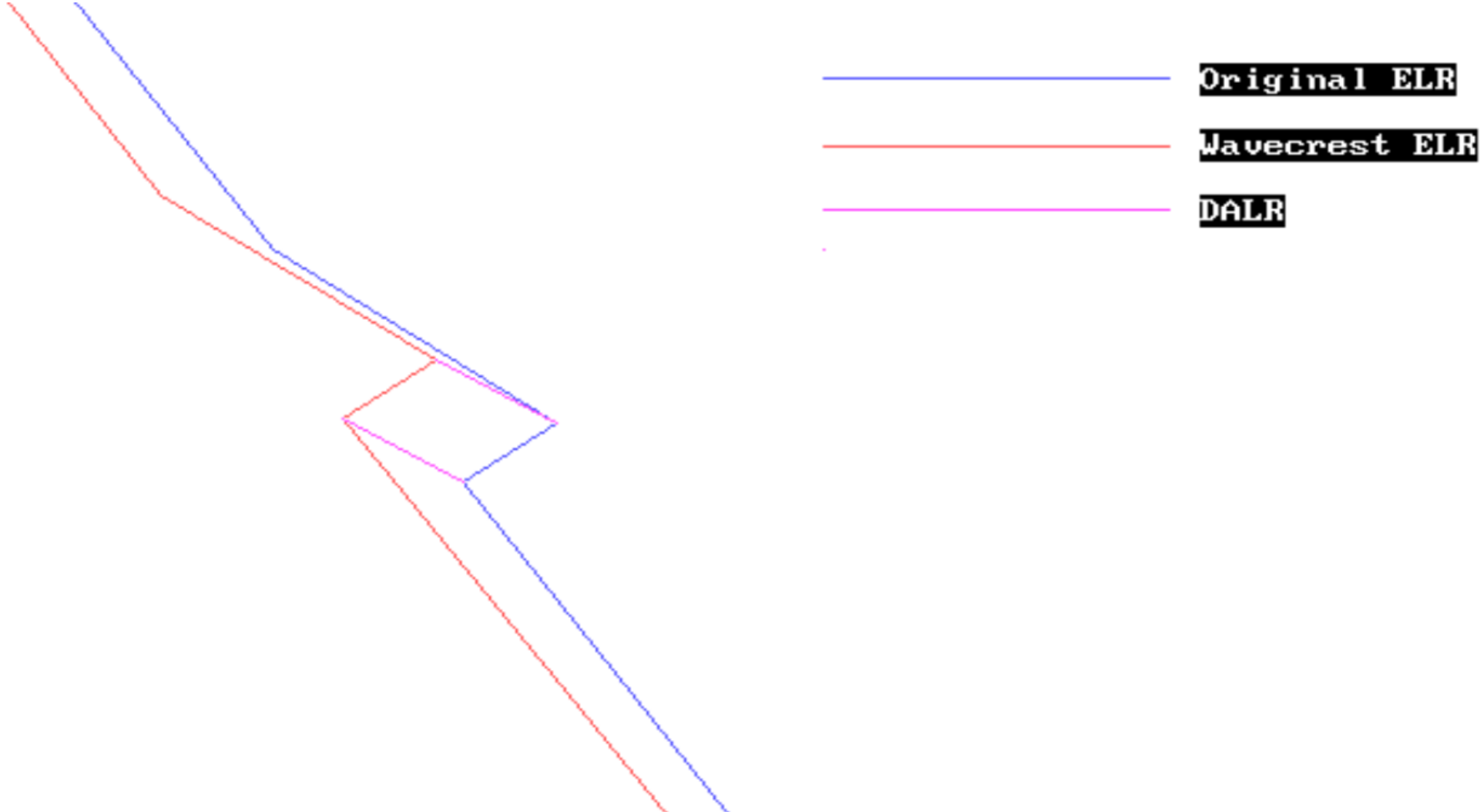


Abb. 5 Stueve diagramm 4

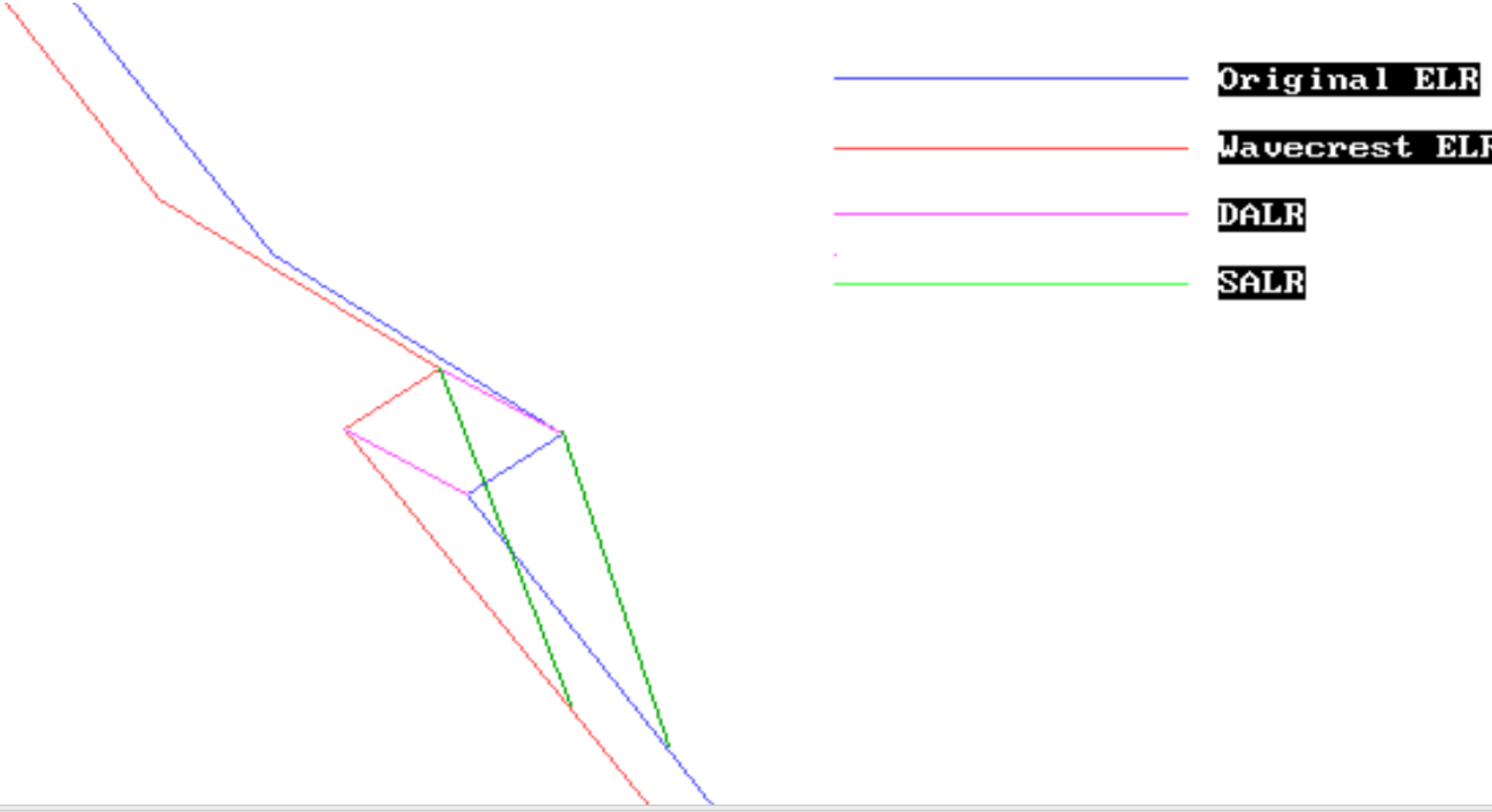


Abb. 6 Stueve Diagramm 5

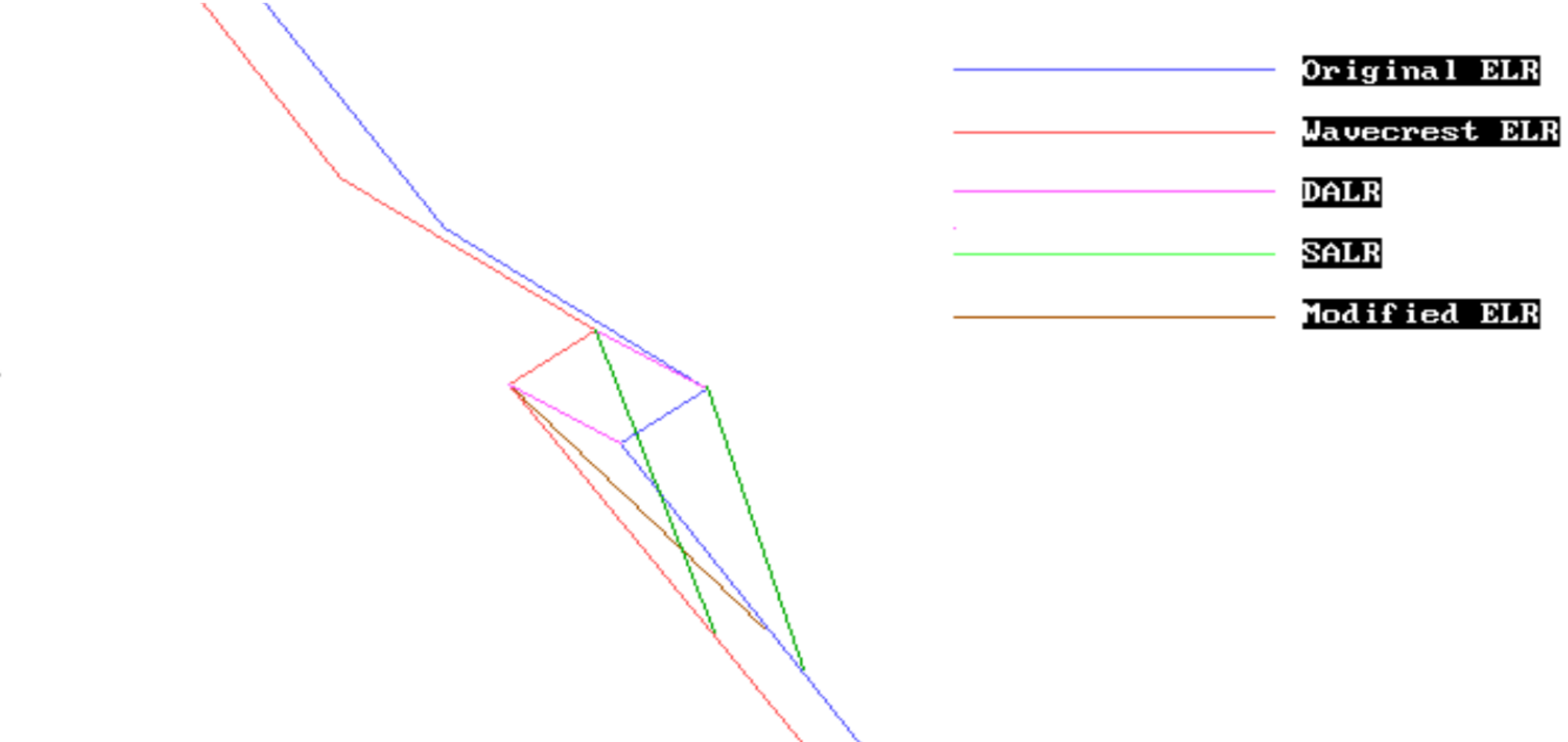


Abb. 7 Stueve Diagramm 6

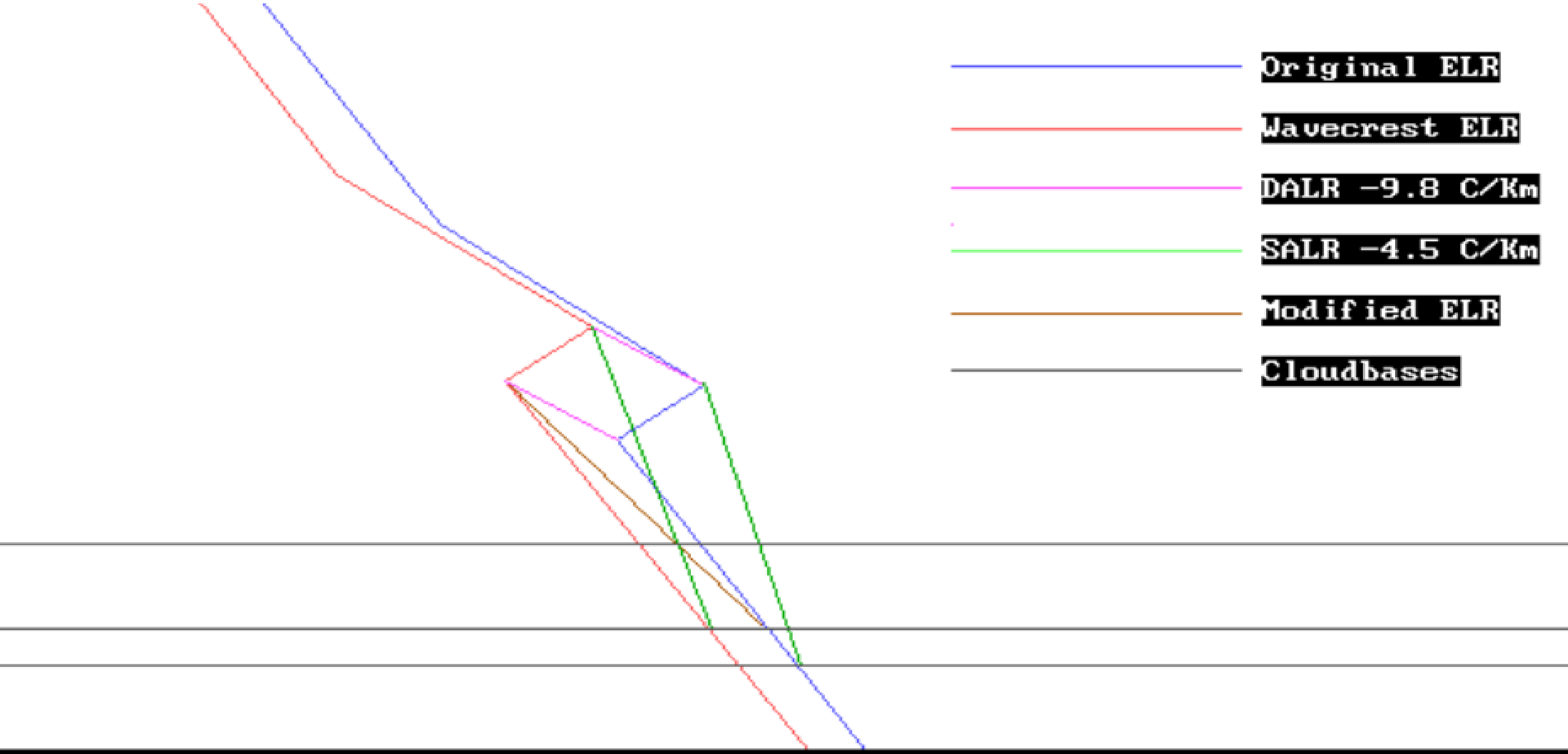


Foto 7 Haufen mit Durchbruch

Foto 8 Zwei Haufen mit Durchbruch

Foto 9 Durchbrueche mit Scherung

Abb. 8 Leiter Wolken

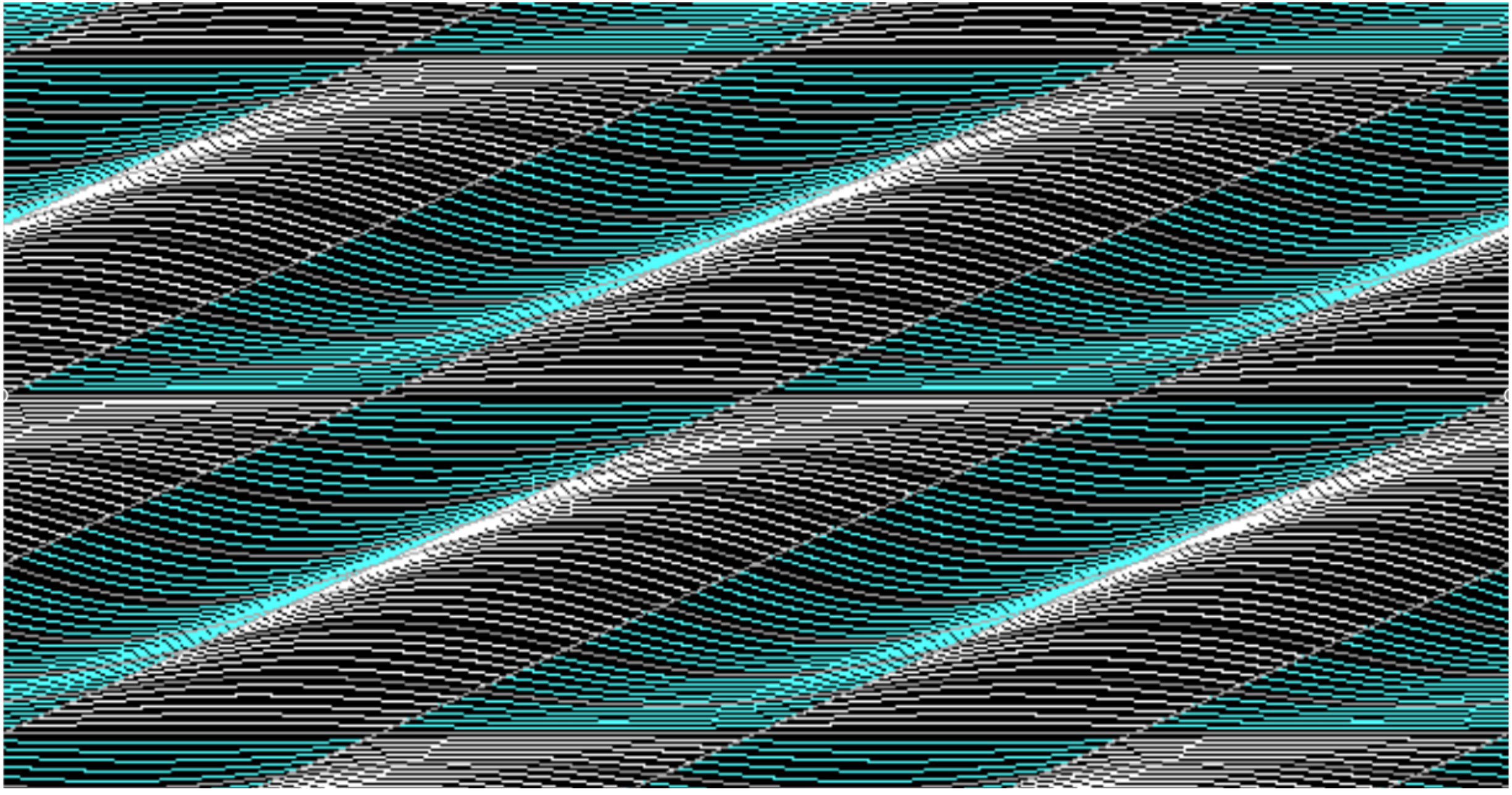


Foto 10 Leiter-Wolken Coburg

Abb. 9 Maeandernde Wolken

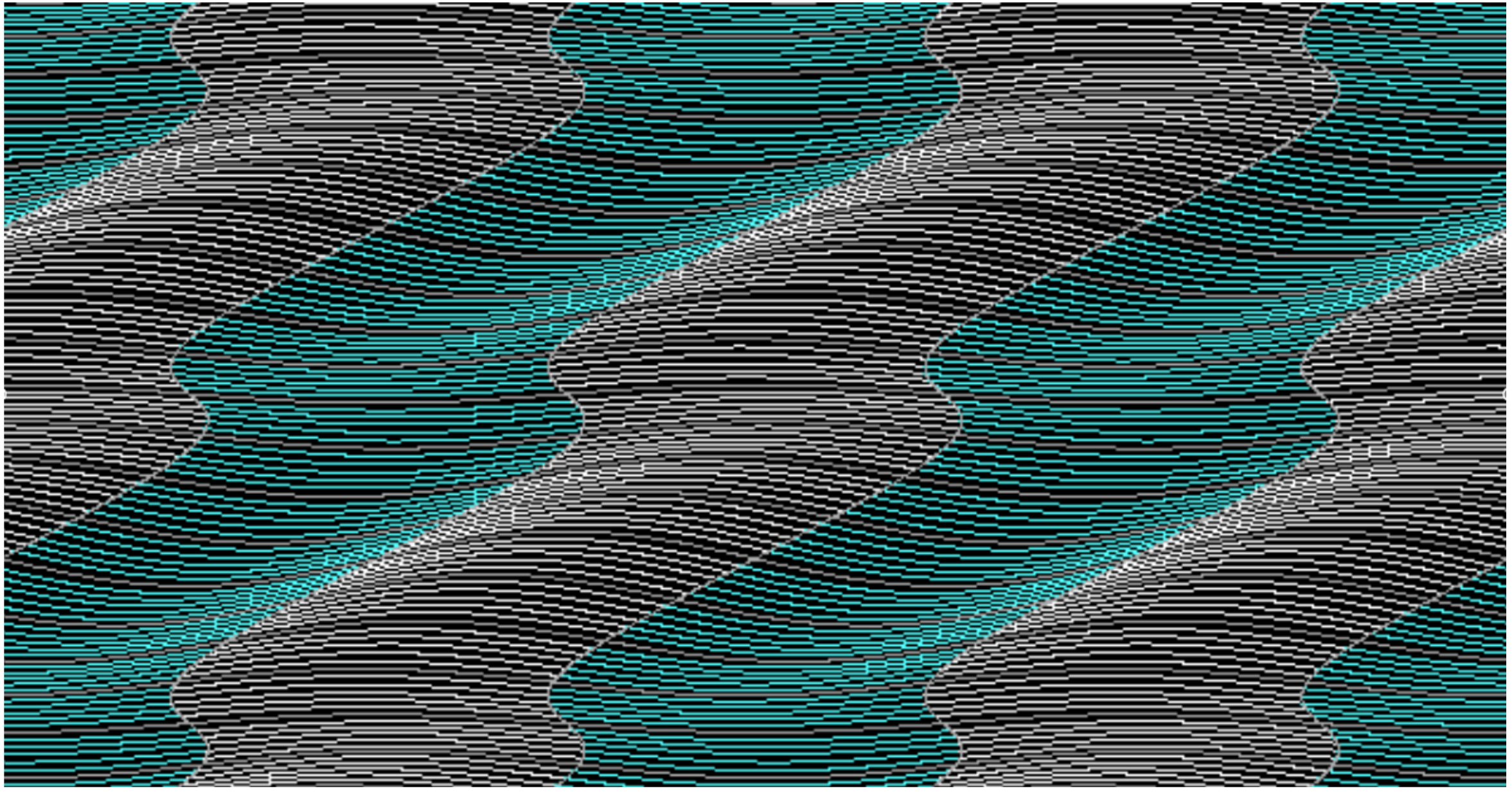


Abb. 10 Kissen-Wolken

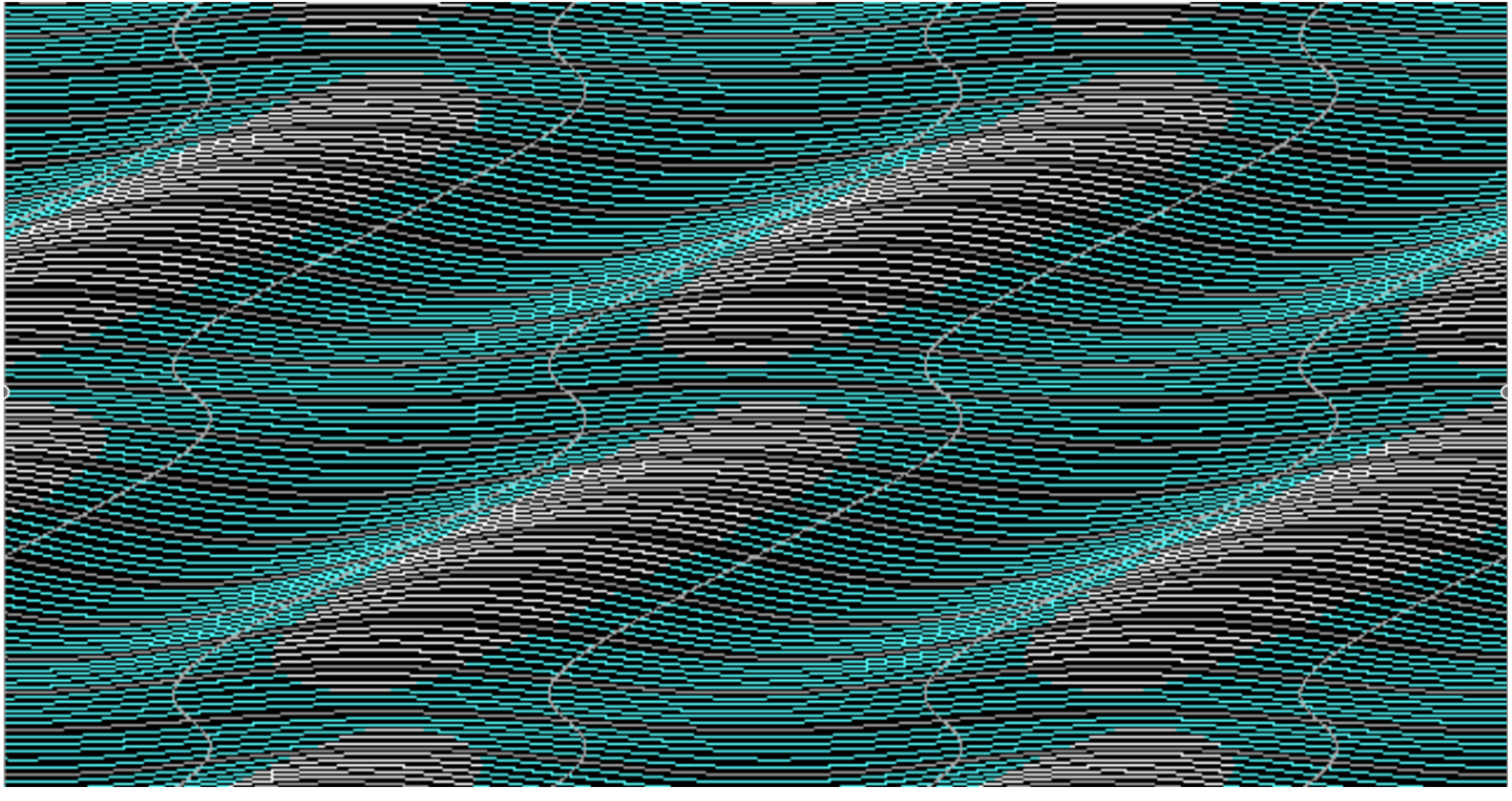


Foto 11 Kissen-Wolke

Foto 12 Kissen-Wolke

Abb. 11 Elliptische Wolken

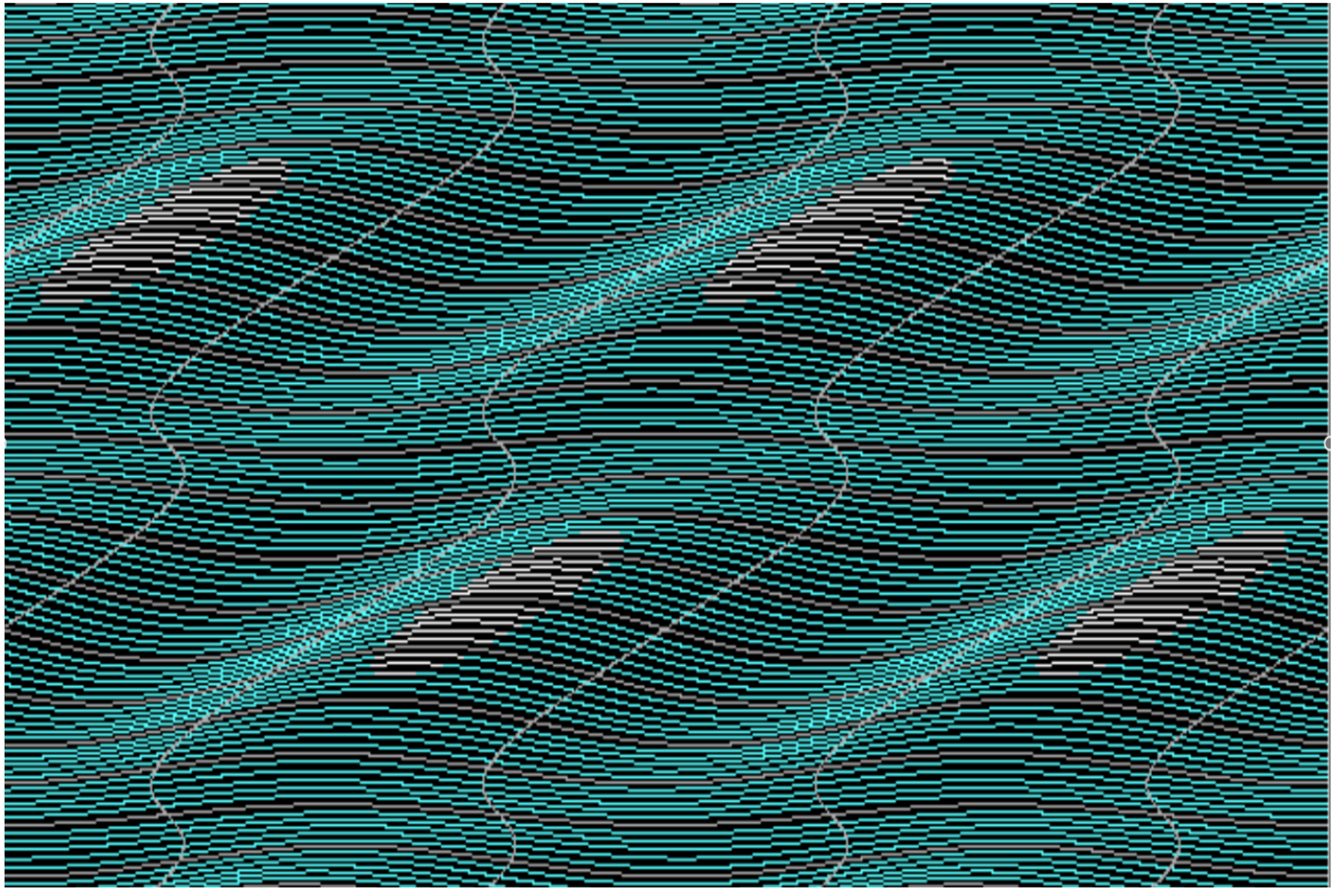


Abb. 12 Schachbrett-Wolken

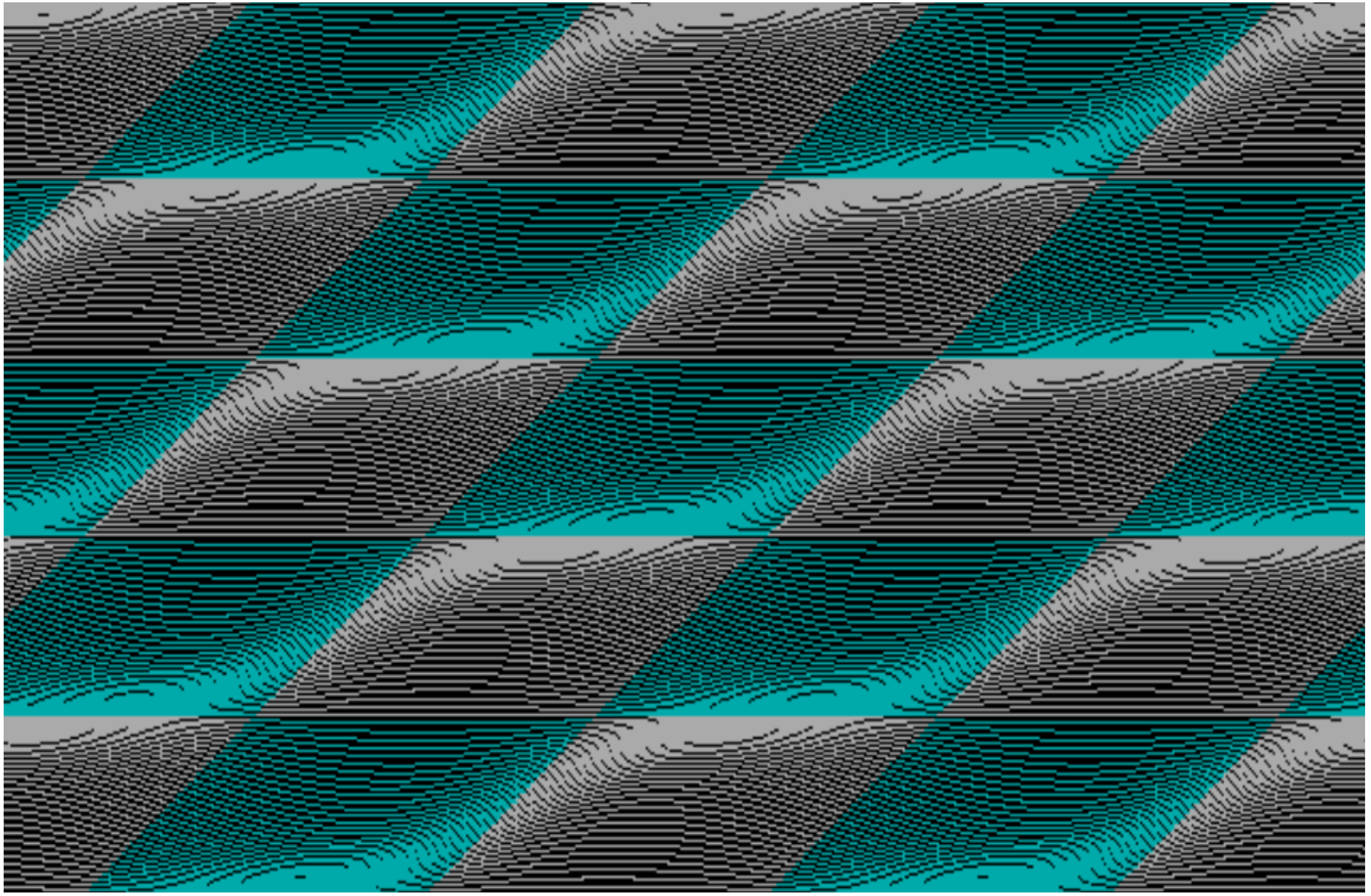


Abb.13 Viereckige Wolken

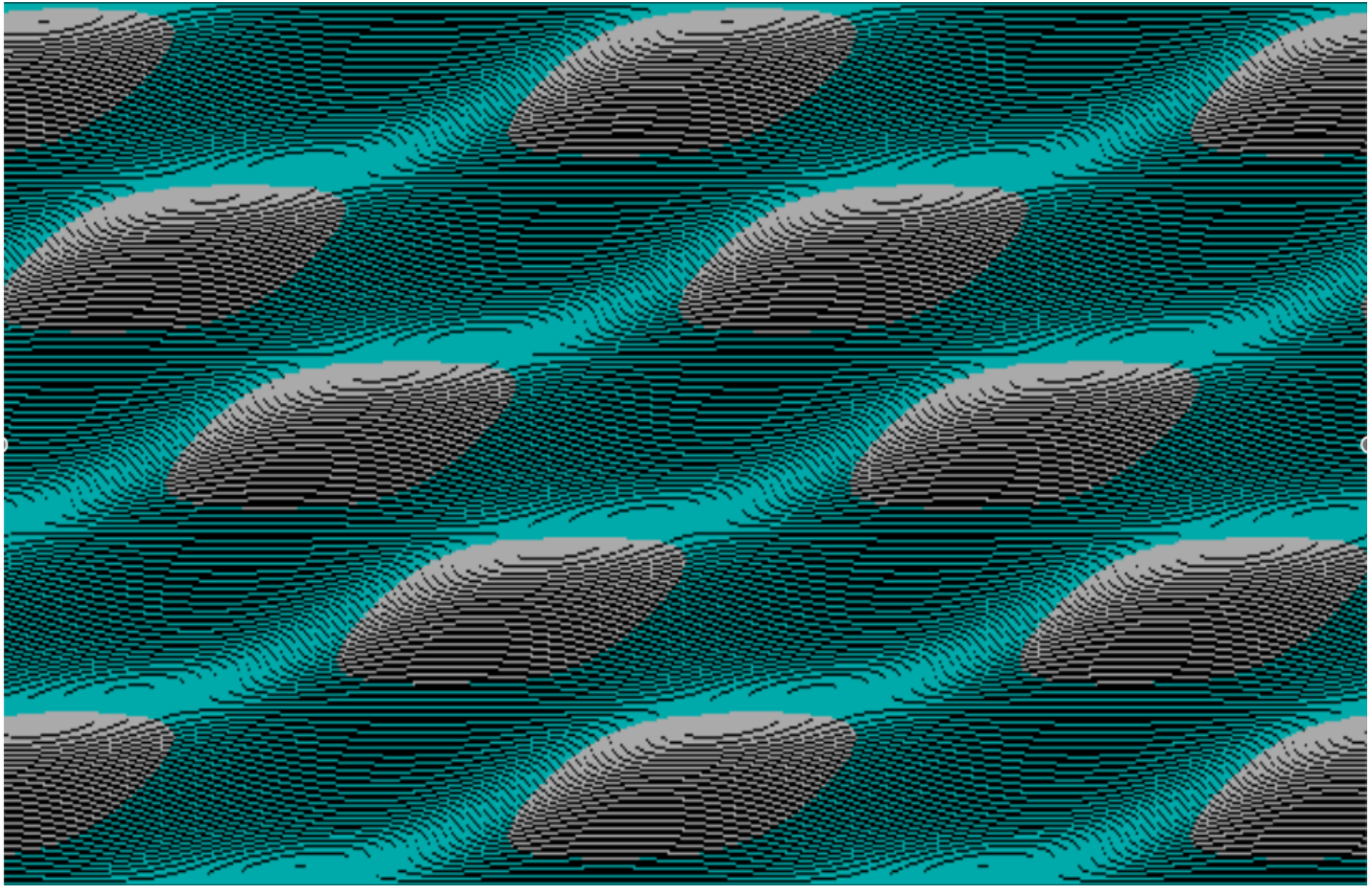


Foto 13 Viele viereckigen Tellerstapel

Abb. 14 Kreisformige Wolken

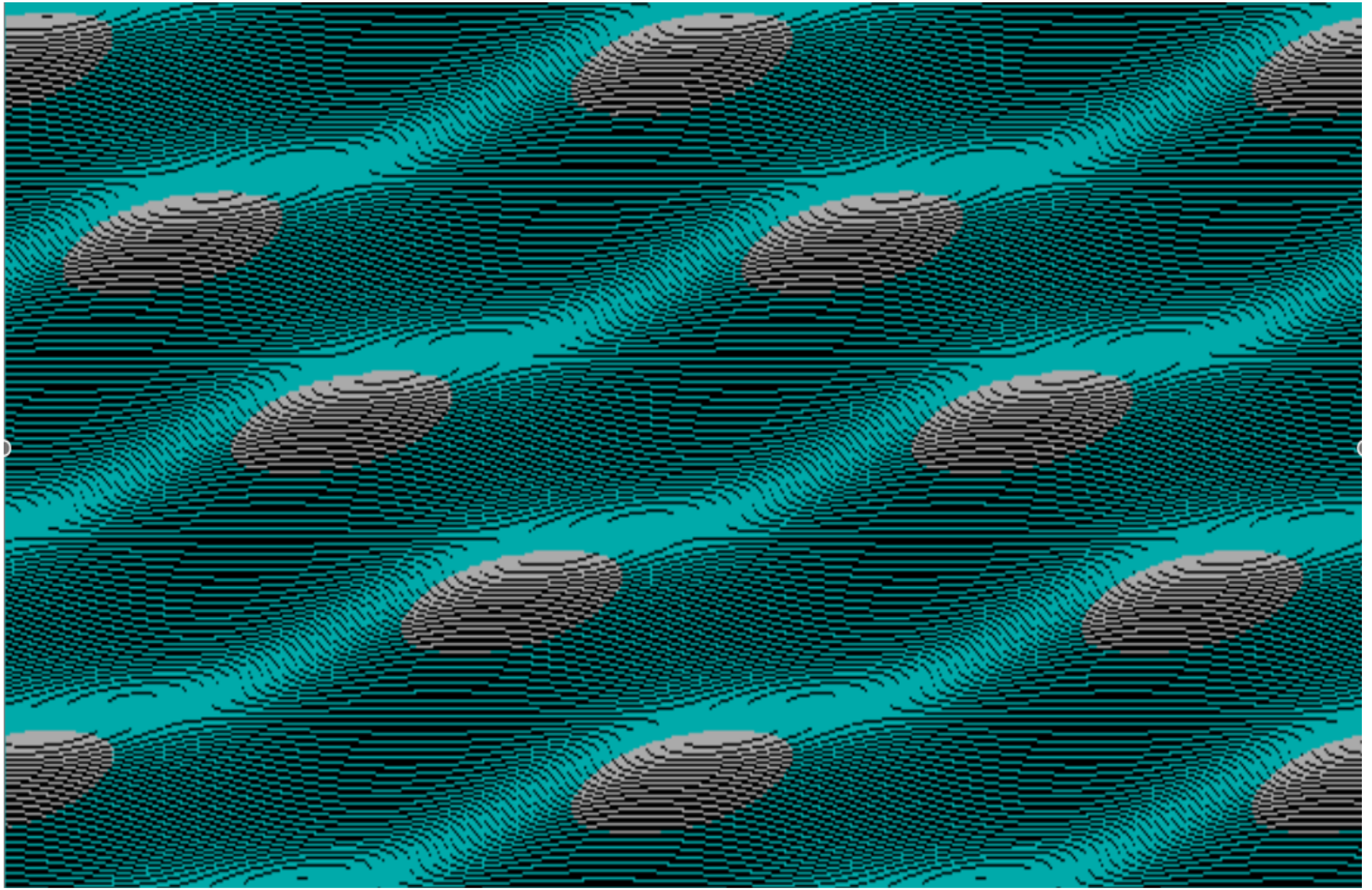


Abb. 15 Wolken-Saeule

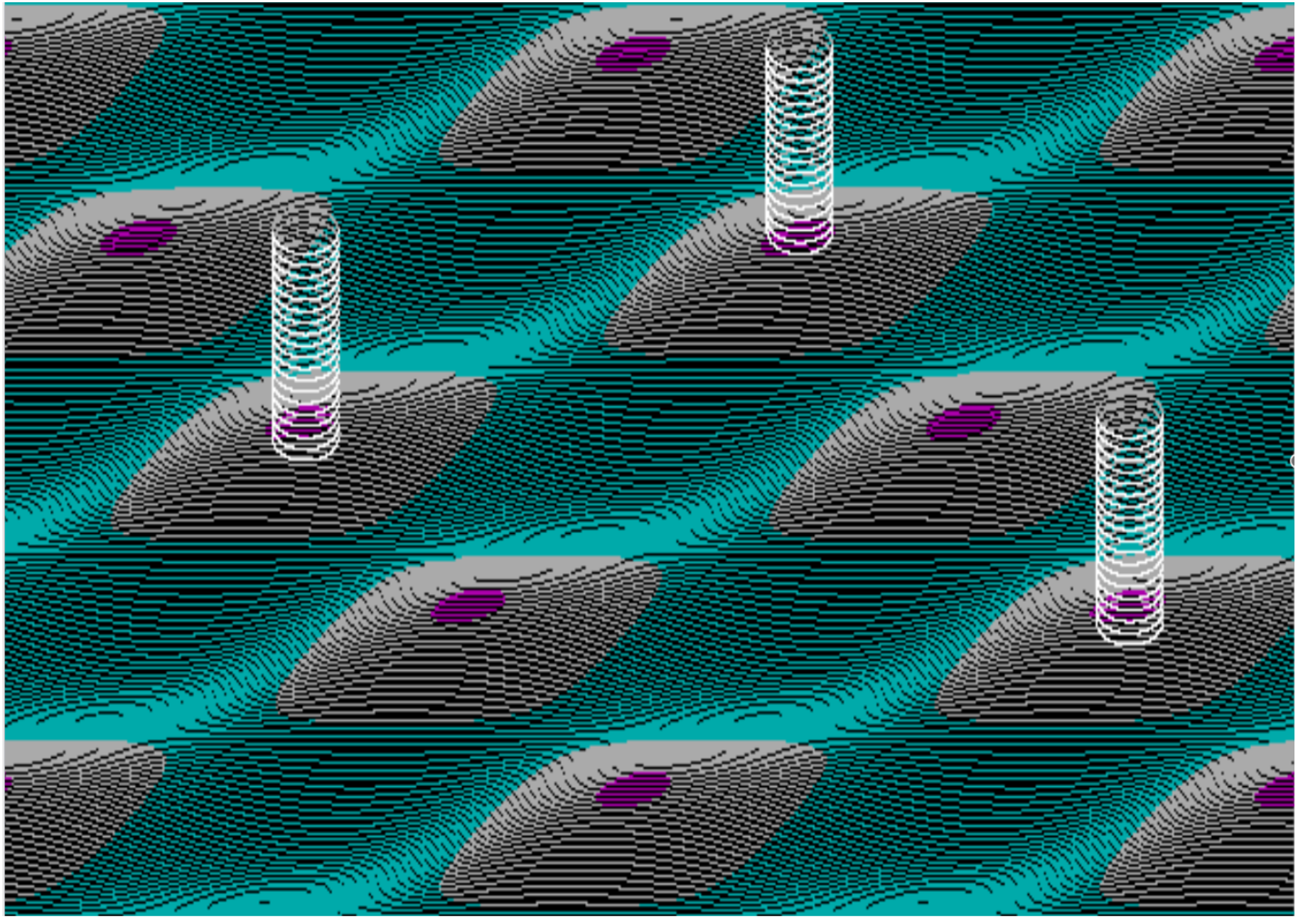


Foto 14 Pilz-Wolke

Foto 15 Wolken-Haufen unter Lenticularis

Foto 16 Zwei Wolken-Saeulen

Foto 17 Saeule mit linsenartige Hut

Foto 18 Wolken-Saeulen Coburg

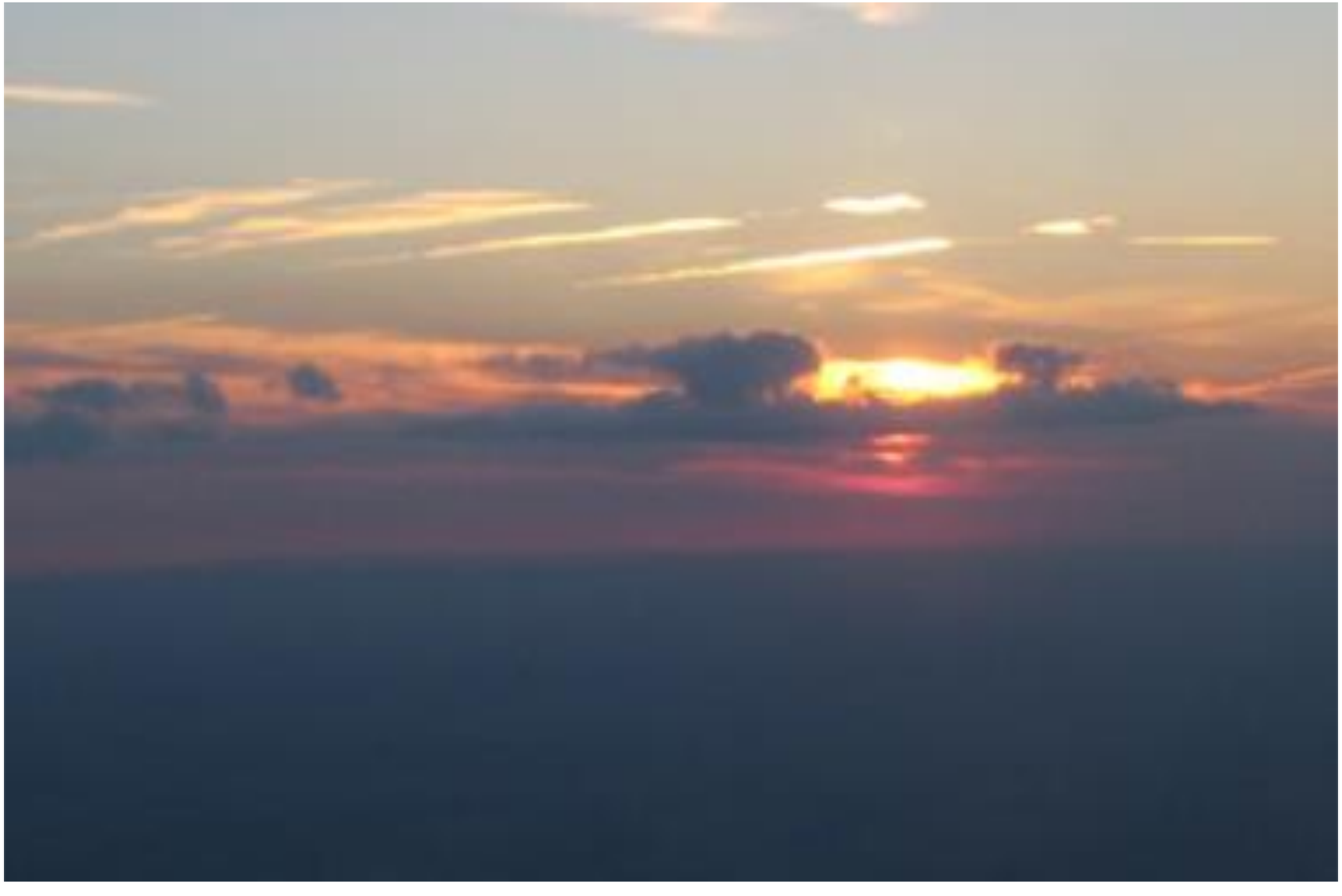


Foto 19 Unterbrockene Saeule

Foto 20 Unterbrockene Saeule

Abb. 16 Durchloecherte Stratuswolken

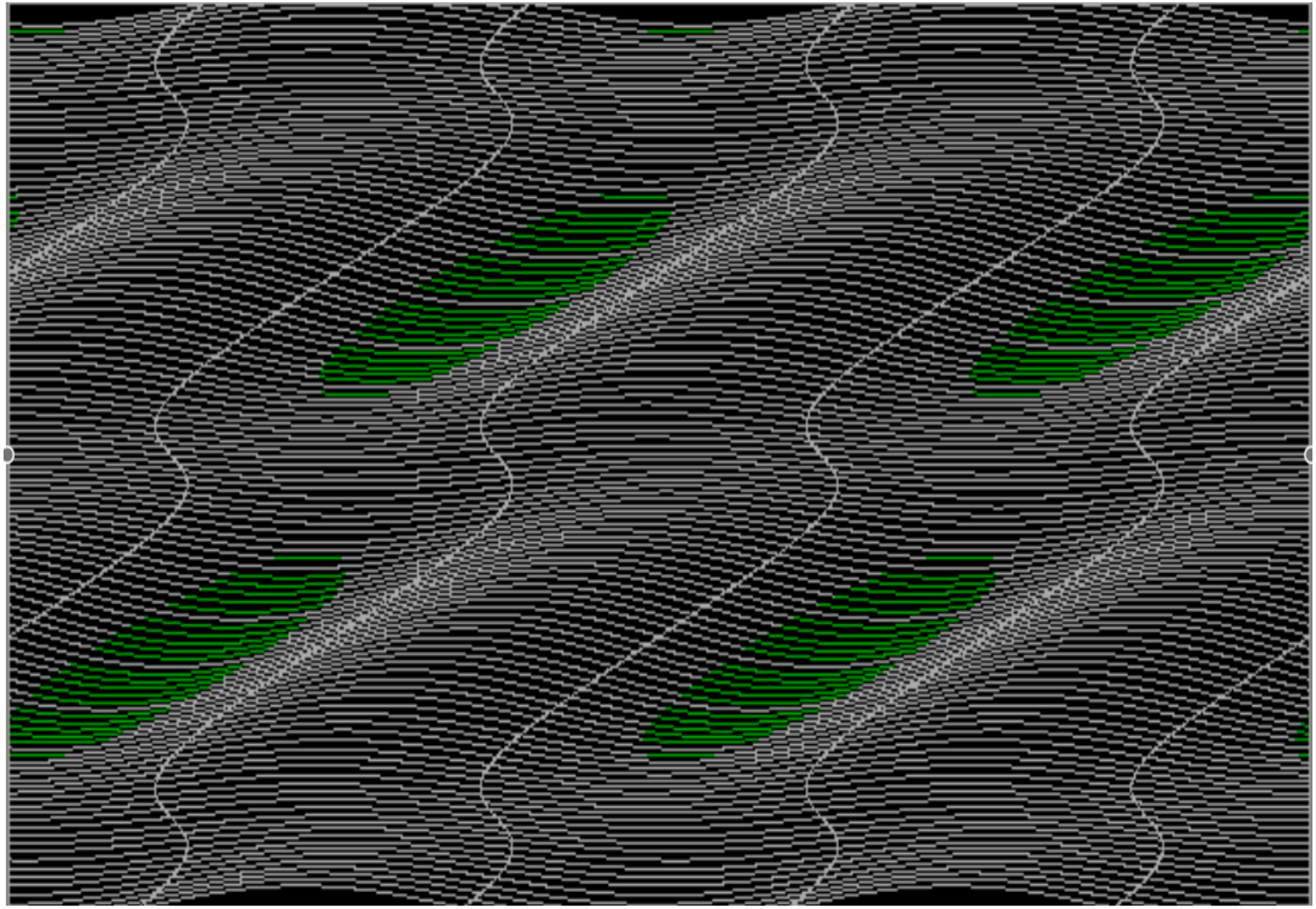


Foto 21 Negative Konvektion Zellen

Foto 22 Haufe und negative Konvektion Zellen

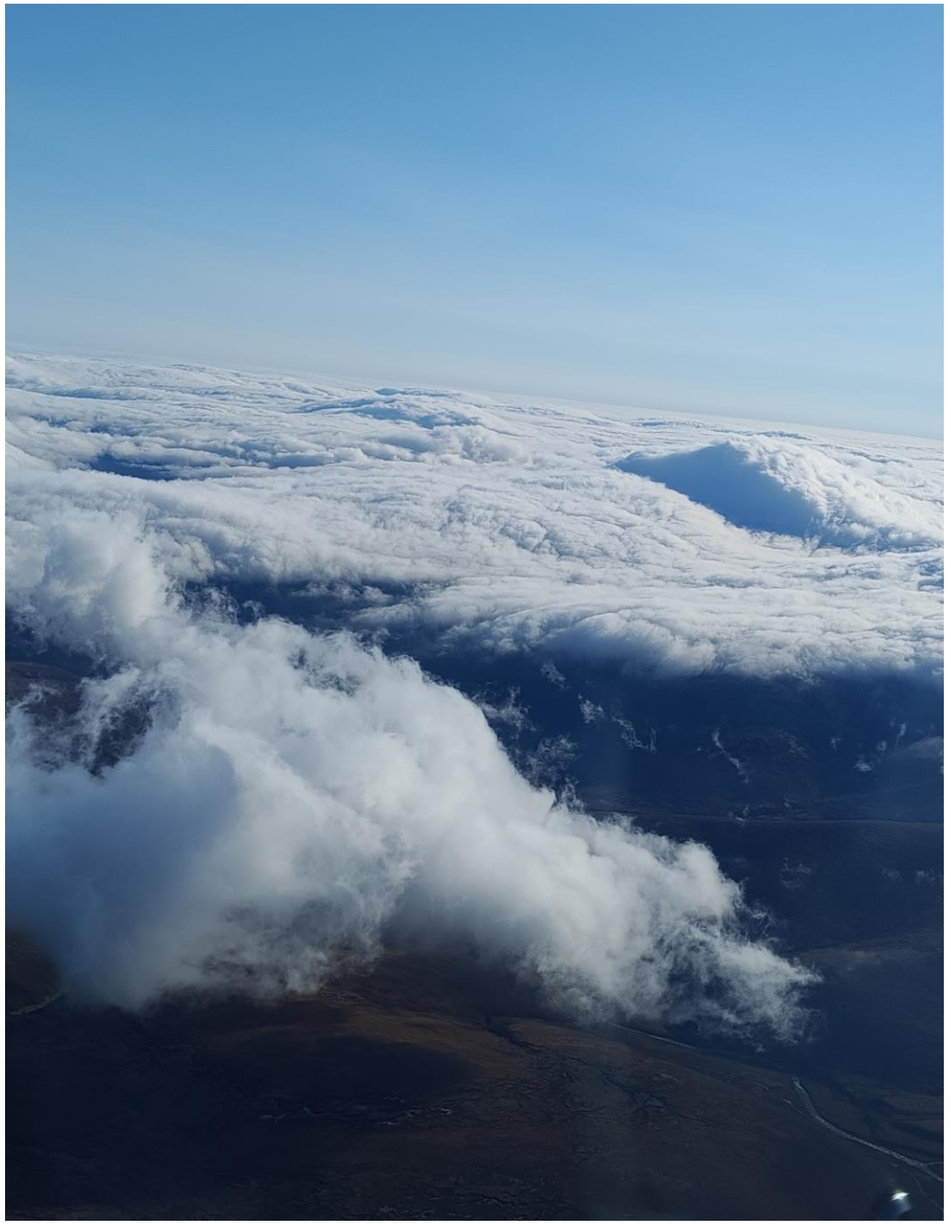
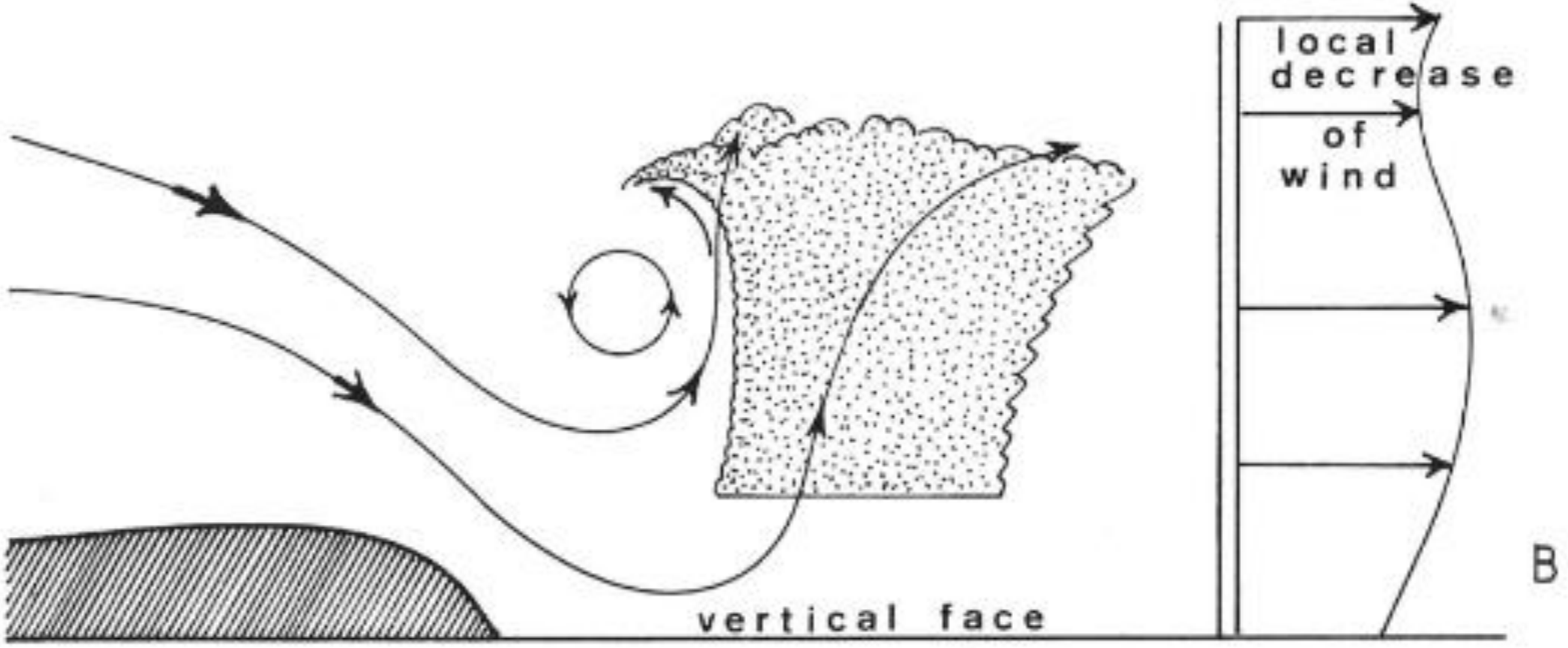


Foto 23 Wolken-Wand

Abb. 16 Wolken-Bogen



(b) Vertical face to wave with steep lee slope and local decrease in wind speed aloft

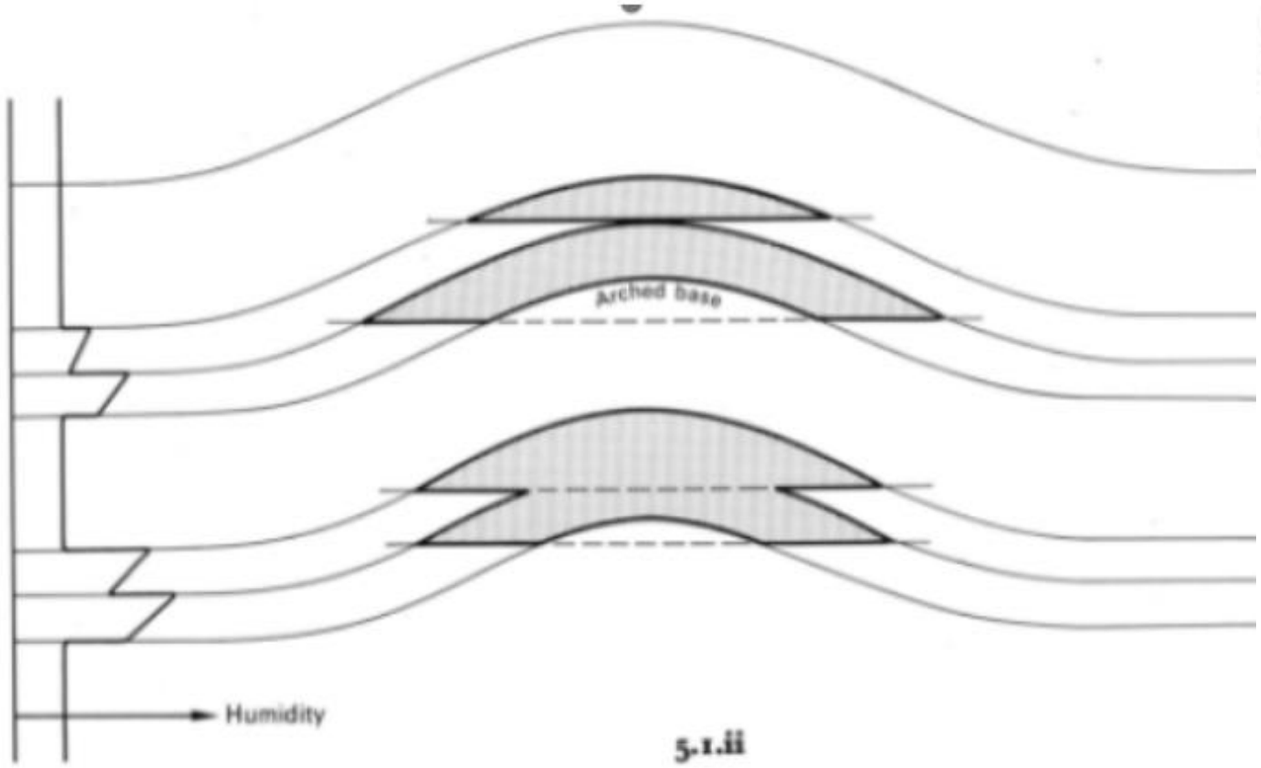
Foto 24 Windscherung-Bogen

Foto 25 Windscherung-Bogen

Foto 26 Kurzwellen Aboyne

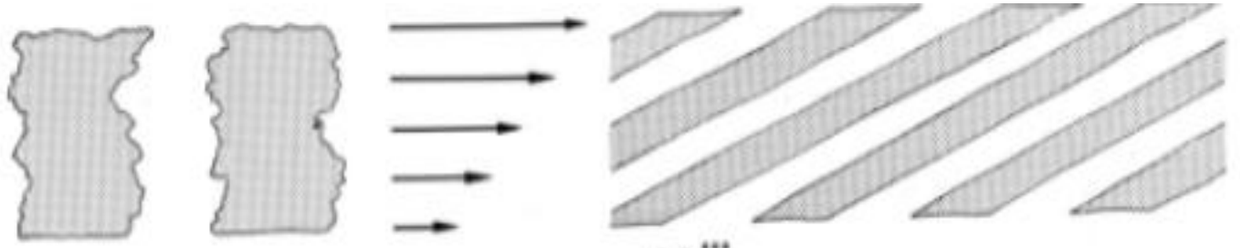
Foto 27 Kurzwellen Coburg

Abb. 17 R. S. Scorer "Clouds of the World" p. 65



5.1.ii

5.1.ii Some wave clouds appear to be composed of several layers. This is because of a layered structure of the humidity. On the left is an imagined profile of relative humidity, each layer with its own condensation level. The shape of a cloud in a mountain wave is shown on the right. Clearly the base of the wave cloud could be arched if the layer lifted into the base of a wave cloud were dry enough.



5.1.iii

5.1.iii It is not usually obvious how the humidity structure becomes laminated in any particular case in which layers appear. But it is known that the moisture carried upwards is transported either by cumulus clouds or by inclined flow up frontal surfaces. In the latter case there is a large amount of shear present so that moist tongues are often drawn out into thin sheets.

When the air is moistened by large cumulus towers these are often sheared over so that after only a few hours the top of a moistened tower of air may be hundreds of miles from the bottom and the compact mass of air stretched out into a very thin long sheet, which soon becomes almost horizontal with other sheets above and below it. This mechanism must operate because the air in between cloud towers is stable so that all mixing motions cease when the clouds evaporate (see 1.1.3). But the effect is usually swamped by subsequent towers rising up through the now almost horizontal layers. Occasionally however this is not so and the laminations are preserved.

Foto 28 Tellerstapel

Foto 29 Hexen-Huete Aboyne