ISARD-2025-plenar001

Elements of the clouds fields stochastic structure

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Solicited talk

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Two stochastic elements of cloudiness are described experimentally in the literature: 1) the ratio of the length of their perimeters to their areas and 2) the differential distributions of the cloud horizontal lengths and the lengths of the blue sky stripes between them. All of this with accuracy of few percent can be understood within the random motions theory by Kolmogorov 1934. From the second moment for the area of probability distribution we find their histograms and differential distributions of horizontal lengths. The lengths of cloud perimeters are proportional to their lengths, but the coefficient of proportionality C should depend on the similarity parameter Π. Such parameter was found and it is natural to put $C=C(\Pi)\sim\Pi$. Therefore both stochastic elements are described as differential distributions of their probabilities.