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Patent Search

Invention Title	A DEEP LEARNING-BASED SYSTEM FOR METEOROLOGICAL SATELLITE CLOUD IMAGE OBJECT DETECTION
Publication Number	43/2022
Publication Date	28/10/2022
Publication Type	INA
Application Number	202241060636
Application Filing Date	23/10/2022
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	PHYSICS
Classification (IPC)	G01S0013950000, G06N0003080000, G06T0007110000, H04L0009320000, G01W0001020000

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Abstract:

[034] The present invention discloses a deep learning-based system for meteorological satellite cloud image object detection. The system includes, but is not limited to, a method that enhances the visible cloud image and marginal information, the cloud atlas produced by this method can preserve as much of the infrared information as feasible, and further this sort of local variance and weighting-based small echo meteorological satellite cloud picture fusion technique is described. The invention also describes cloud detection techniques for a particular class of meteorological satellite cloud images, and thundercloud recognition techniques using clusters and satellite cloud images. The cloud cluster performs initial data transmission for satellite analysis, projective transformation of the cloud atlas, registration of the cloud atlas picture, and automatic cloud cluster identification at the base. Accompanied Drawing [FIGS. 1-2]

Complete Specification

Description:[001] The present invention relates to the field of devices, systems, methods and techniques for presenting, tracking, reporting, and analyzing meteorological satellite cloud images and combines through local variance and weighting and object detection. The invention more particularly relates to a deep learning-based system for meteorological satellite cloud image object detection.

BACKGROUND OF THE INVENTION

[002] The following description provides the information that may be useful in understanding the present invention. It is not an admission that any information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[003] Further, the approaches described in this section are approaches that could be pursued, but not necessarily approaches that have been previously pursued. Therefore, unless otherwise indicated, it should not be assumed that any of the approaches described in this section qualify as prior art or are included in this section.

[004] The cloud atlas data that weather satellites collect has become a crucial information source for monitoring and early warning of catastrophic weather. The visible cloud image reflection is the albedo of the storm, and the infrared cloud image reflection is the bright temperature difference. The invention provides two groups of data are image co-registered, which makes use of the merged images to automatically monitor the strong convection cloud cluster and its practical implications.

[005] Accordingly, on the basis of aforesaid facts, there remains a need in the prior art to provide a deep learning-based system for meteorological satellite cloud image object detection. The proposed system overcomes the problem of conventional and complex techniques, and which have the potential of accelerating the process.

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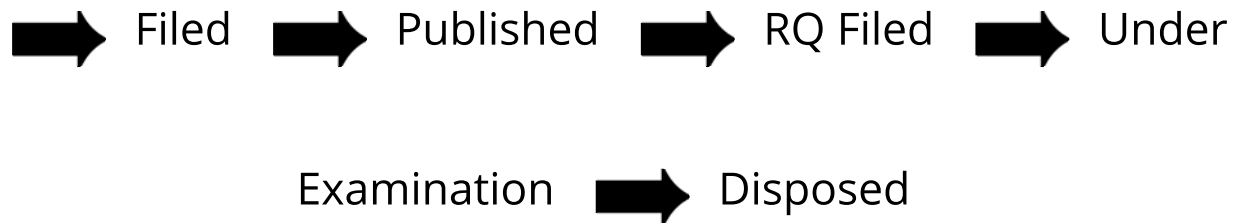
Application Details	
APPLICATION NUMBER	202241060636
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	23/10/2022
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TITLE OF INVENTION	A DEEP LEARNING-BASED SYSTEM FOR METEOROLOGICAL SATELLITE CLOUD IMAGE OBJECT DETECTION
FIELD OF INVENTION	PHYSICS
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E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	28/10/2022

Application Status

APPLICATION STATUS

Awaiting Request for Examination

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