ΠΑΝΕΠΙΣΤΗΜΙΟ ΙΩΑΝΝΙΝΩΝ
ΣΧΟΛΗ ΘΕΤΙΚΩΝ ΕΠΙΣΤΗΜΩΝ
ΤΜΗΜΑ ΦΥΣΙΚΗΣ

ΟΜΙΛΙΑ
ΤΜΗΜΑΤΟΣ ΦΥΣΙΚΗΣ

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«Understanding the role of Clouds on the Earth's Radiation budget: Are we making progress? »

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http://tinyurl.com/y7y2vd3s

Abstract

The advent of satellite observations in the last 20 years has helped us make progress in elucidating the role of clouds in the current climate. We are now very confident that the cooling effect of reflected solar radiation exceeds the warming effect of absorption end re-mission of thermal infrared radiation by a significant amount for both the planet as a whole and at the surface. It also appears that clouds modify only slightly the radiative cooling of the cloudless atmosphere stemming from infrared flux divergence exceeding solar absorption. But the devil is in the details. Which cloud systems exactly are responsible for most of solar cooling and thermal warming and the eventual small atmospheric effect? And perhaps more importantly, how will the present climate cloud radiative effects change in a future where clouds change their geographical distribution, frequency of occurrence and properties? My talk will touch on these topics and present some of the ideas my own group is investigating, specifically on how to decompose cloud radiative impacts with cloud classifications based on both passive and active spaceborne observations.