

Nobel Prize winners in Physics

News Letter - 2021 Manabe MCE PHYSICS

Tuesday, November 30th 2021



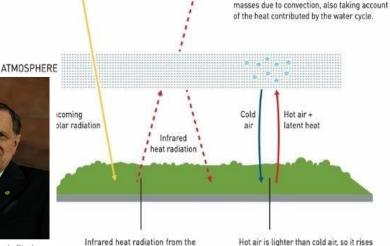
© Nobel Prize Outreach. Photo: Risdon Photography Syukuro Manabe Prize share: 1/4



© Nobel Prize Outreach. Photo: Bernhard Ludewig Klaus Hasselmann Prize share: 1/4



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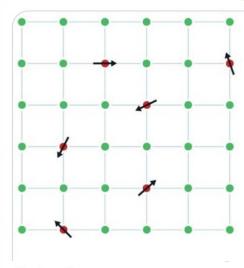


arranged near radiation from the ground is partially absorbed in the atmosphere, warming the air and the ground, while some radiates out into space. through convection. It also carries water vapour, which is a powerful greenhouse gas. The warmer the air, the higher the concentration of water vapour. Further up, where the atmosphere is colder, cloud drops form, releasing the latent heat stored in the water vapour.

Syukuro Manabe was the first researcher to

explore the interaction between radiation balance and the vertical transport of air

The Nobel Prize in Physics 2021 was awarded "for groundbreaking contributions to our understanding of complex physical systems" with one half jointly to Syukuro Manabe and Klaus Hasselmann "for the physical modelling of Earth's climate, quantifying variability and reliably predicting global warming" and the other half to Giorgio Parisi "for the discovery of the interplay of disorder and fluctuations in physical systems from atomic to planetary scales".



Spin glass

A spin glass is a metal alloy where iron atoms, for example, are randomly mixed into a grid of copper atoms. Each iron atom behaves like a small magnet, or spin, which is affected by the other magnets around it. However, in a spin glass they are frustrated and have difficulty choosing which direction to point. Using his studies of spin glass, Parisi developed a theory of disordered and random phenomena that covers many other complex systems.

IronCopper

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