



Observational assessment of large scale boreal forest feedback on surface climate

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The feedback of large scale boreal forest on surface climate is assessed by applying the statistical method of EFA (Equilibrium Feedback Analysis) on remote sensing observation. The statistical EFA assessment of the feedback is first tested in a fully coupled atmosphere-ocean-dynamic vegetation model in comparison with dynamic assessment using explicit sensitivity ensemble experiments. The comparison shows that the statistical assessment agrees well with the dynamic assessment, giving us confidence on the validity of the statistical method. The statistical EFA assessment is then applied to remote sensing observation to assess the feedback in the observation. This observational assessment shows that boreal forest exerts a significant positive feedback on surface temperature, with the feedback accounting about 20-30% of the total interannual variability.