



AIRBORNE ESTIMATION OF BOREAL FOREST LAI IN WINTER CONDITIONS: COMPARISON WITH SUMMER AND WINTER GROUND TRUTH

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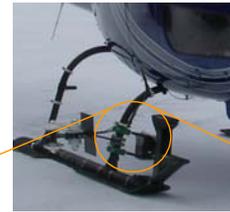
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INTRODUCTION

The boreal zone forest has a very significant influence on the northern hemisphere albedo and is an important component of the northern hemisphere carbon budget. In winter the effect of the leaf area index (LAI) on the albedo is marked. For large areas of tall vegetation it is difficult to get aerially representative LAI ground truth using direct or indirect methods, especially in regions of difficult accessibility.

Analysis of hemispherical images taken at the forest floor is an established method for estimation of the canopy LAI. Here we demonstrate a similar technique based on airborne wide optics images taken in winter, so that the light background sky is replaced by the forest floor snow cover.

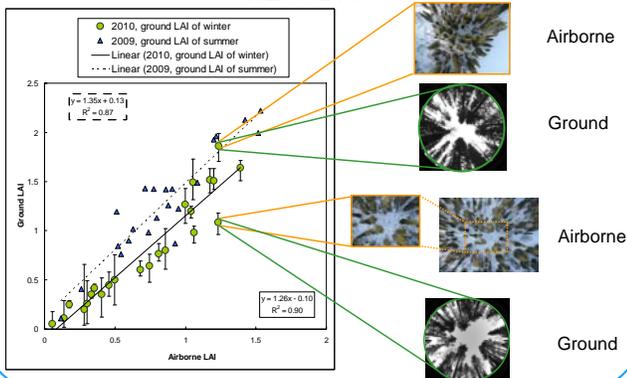


LAI plot seen from the helicopter....

... and from the ground.



RESULTS



CONCLUSIONS

The average difference of the winter time ground based and airborne regression (above) based LAI value was 0.16 and in 80% of cases it was smaller than 0.28. The deciduous species decrease the correlation of airborne LAI estimates with summer time ground based LAI values.

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