

DRAGON2 summary report: Applying PolSAR and PolInSAR to Forest Structure Information Extraction

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The research activities and achievements in the field of applying PolSAR and PolInSAR to forest structure information extraction will be summarized and presented. Firstly, the developed method to use the PCT extracted profile information for forest above ground biomass estimation in forest stand level will be introduced; Secondly, the limitation of the ALOS PolInSAR dataset acquired for the Culai test site for forest height extraction because of its long temporal baseline (46 days), and how the PolInSAR coherence optimization methods can help improve the topography inversion accuracy under forest canopy will be presented. Lastly, we will present the forest scar mapping results using PolSAR SVM classification method with Radarsat-2 and ALOS PALSAR PolSAR data for the Shi Ba Zhan test site in the Northeast of China.

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"龙极化"二期总结报告：基于极化SAR和极化干涉SAR 提取森林结构信息

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本报告将介绍我们基于机-星载极化SAR (PolSAR) 和极化干涉SAR (PolInSAR) 数据开展的与森林结构信息提取相关的研究工作及其相关成果，主要包括如下三方面的内容：首先，介绍我们发展的一种基于极化相干层析 (PCT) 技术提取森林垂直结构信息，进而用于估测林分尺度森林地上生物量分布的模型和方法；其次，我们将介绍徂徕山试验区ALOS PolInSAR数据的获取情况，评价该数据在森林高度提取方面的局限性（该卫星的时间基线长达46天，存在严重的时间去相干），以及如何使用PolInSAR最优相干理论提高森林覆盖下地形的反演精度；最后，我们将介绍中国东北十八站试验区的建立情况，展示在该试验区基于Radarsat-2和ALOS PALSAR PolSAR数据，采用支持向量机 (SVM) 进行土地覆盖利用识别的研究结果。