<|begin_of_text|> Mapping functional diversity from remotely sensed morph ological and physiological forest traits Assess ing functional diversity from space can help predict productivity and stability of forest ecosystems at global scale using biodiversity âĢĵ ec os ystem functioning relationships. We present a new spatial ly continuous method to map regional patterns of tree functional diversity using combined laser scanning and imaging spectro scopy. The method does not require prior tax onomic information and integrates variation in plant functional traits between and within plant species. We compare our method with leaf -level field measurements and species -level plot inventory data and find reasonable agreement. Morph ological and physiological diversity show consistent change with top ography and soil, with low functional richness at a mountain ridge under specific environmental conditions. Overall, functional richness follows a logarith mic increase with area, whereas divergence and even ness are scale invariant. By mapping diversity at scales of individual trees to whole communities we demonstrate the potential of assessing functional diversity from space, providing a pathway only limited by technological advances and not by methodology.