

## 附录2 本研究测定的林分结构参数基本信息

### Appendix 2 Basic information on the parameters of forest stand structure measured in this study

类型 Type	参数 Parameters	缩写 Abbreviation	描述 Description
光的可利用性	平均绝对偏差 Average absolute deviation	AAD	$AAD = \frac{\sum_{i=1}^n (z_i - \bar{z})}{n}$
	冠层起伏率 Canopy relief ratio	CRR	$CRR = \frac{\text{mean} - \text{min}}{\text{max} - \text{min}}$ mean 表示取样单元内的平均林冠高度, max 和 min 分别表示取样单元内的最大和最小林冠高度(Parker & Russ, 2004; Chirici et al, 2016)
	树高的四分位距 Interquartile Distance of tree height	HT <sub>IQ</sub>	HT <sub>IQ</sub> = Ele75% - Ele25%, 其中, Ele75%为75%高度百分位数, Ele25%为25%高度百分位数
	最大树高 The max of tree height	HT <sub>max</sub>	所有点的 Z 值的最大值(Nasset, 2004)
	平均树高 The mean of tree height	HT <sub>mean</sub>	所有点的 Z 值的平均值(Nasset, 2004)
	树高中位数 The median of tree height	HT <sub>median</sub>	所有点的 Z 值的中位数
	树高的 95% 百分位数 95% percentile of tree height	HT <sub>95</sub>	对归一化的激光雷达点云按高度进行排序, 计算统计单元内, 95%的点所在的高度(Wulder et al, 2012)。
	树高偏度 The skewness of tree height	HT <sub>skew</sub>	所有点的 Z 值的偏斜度 $V = \frac{\sum_{i=1}^n (Z_i - \bar{Z})^2}{n}$
	郁闭度 Canopy cover	CC	$CC = \frac{n_{\text{vegfirst}}}{n_{\text{first}}}$ n <sub>vegfirst</sub> 为首次回波的植被点数, n <sub>first</sub> 为首次回波的总点数(Ma et al, 2017)。
	光的异质性	叶面积指数 Leaf area index	LAI
垂直分布率 Vertical distribution ratio		VDR	$VDR = \frac{HT_{\text{max}} - HT_{\text{med}}}{HT_{\text{max}}}$ 其中, HT <sub>max</sub> 为最大树高, HT <sub>med</sub> 为树高的中位数(Goetz et al, 2007)。
树高变异系数 Coefficient of variation of tree height		HT <sub>cv</sub>	取样单元内, 所有点高度值的变异系数(Zhang et al, 2022)
树高峰度 The kurtosis of tree height		HT <sub>kurtosis</sub>	所有点的 Z 值的峰度(Zhang et al, 2022)
树高标准差 The standard deviation of tree height		HT <sub>sd</sub>	所有点 Z 值的标准差
胸高断面面积和 Stand basal area		BA	$BA = \sum_{i=1}^n \frac{\pi \times \text{DBH}_i^2}{4}$ n 表示目标样方中所有个体主干和分枝的数量, DBH <sub>i</sub> 表示样方中个体 i 的胸径(方精云等, 2009; Chu et al, 2019)。
胸径变异系数 The coefficient of variation of diameter at breast height		DBH <sub>cv</sub>	所有树胸径的变异系数

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