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**Comparing Vertical-Axis and Horizontal-Axis Wind Turbines: Introducing ASR, Approximating Design, and Calculating Average Radius**

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The geometry of horizontal-axis and vertical-axis wind turbines is approximated in various ways, and the average radius of each approximation is calculated. The values of specific approximations ranged from half the maximum radius to about 60% of the maximum radius. Furthermore, this work proposed using an average speed ratio instead of the normal tip speed ratio in certain circumstances. Instead of measuring the ratio of the speed of the tip of the blade to the speed of the wind, average speed ratio compares the speed of the average radius to the speed of the wind. The calculated values ranged from 3.5 to 3.8, as opposed to 3.8 to 7.0 for the tip speed ratio. More extensive work is necessary to determine how effective of a tool this would be.