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Assessing the Tree Cooling Effects in California Schoolyards

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# Assessing the Tree Cooling Effects in California Schoolyards

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**Abstract:** As urban areas continue to expand globally, measuring urban microclimates is becoming increasingly critical. Climate change is projected to intensify the frequency and intensity of extreme weather events, such as heatwaves, raising concerns among scientists and policymakers due to their significant impacts on human health. Children are particularly vulnerable to these climate-related risks, making schoolyards essential spaces for both social interactions, learning and physical activity. Moreover, for children in underserved communities, schoolyards often provide the only access to green spaces and urban nature. As a result, there is growing interest in improving these environments to enhance their social and ecological benefits. California, with its hot summers, is experiencing more frequent and intense heat waves, amplifying the urgency of addressing urban heat mitigation strategies. Our study aims to measure the influence of different surface materials and tree canopy cover on heat exposure and human thermal comfort. By deploying different climatic sensors in selected campuses in three school districts, we will measure a range of microclimatic variables related to ‘heat exposomes’. The outcomes of our project will provide robust insights and a compelling database that will hopefully inform policies and design interventions to create cooler, more climate-resilient outdoor spaces for children.

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