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## Contribution of mixing in the ABL to new particle formation based on observations

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**Abstract.** The connection between new particle formation and micro- and mesoscale meteorology was studied based on measurements at SMEAR II station in Southern Finland. We analyzed turbulent conditions described by sodar measurements and utilized these combined with surface layer measurements and a simple model to estimate the upper boundary layer conditions. Turbulence was significantly stronger on particle formation days and the organic vapor saturation ratio increase due to large eddies was stronger on event than nonevent days. We examined which variables could be the best indicators of new particle formation and concluded that the formation probability depended on the condensation sink and temporal temperature change at the top of the atmospheric boundary layer. Humidity and heat flux may also be good indicators for particle formation.

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