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Nocturnal Temperature Inversions Under Calm Clear Conditions: an Analytical Study

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The knowledge of inversion height in the nocturnal boundary layer (NBL) under calm clear conditions is crucial in determining the fate of chemical pollutants that are (accidentally or otherwise) released into the atmosphere. A new analytical expression for temperature profiles over bare soil surfaces under calm clear conditions is used to study inversion height and intensity as a function of surface parameters like ground emissivity and cooling rates. Previous analytical expressions available in the literature have ignored these parameters.

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