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A decadal ozone trends in the rural sites of New England in the United States

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Ground-level ozone is considered as a harmful trace gas and is one of the six criteria pollutants in the United States. The amount of ozone relies on its precursors (NO_x and VOCs) and the environmental conditions (temperature, sunlight, transport, etc). In the rural sites of New England in the United States, ozone mixing ratios are strongly tied to meteorological conditions as well as the importing airflow (transport mechanisms). With the continuous monitoring of ozone in two sites of New England in both rural and elevated area from 2001 to 2010, ozone trends were analyzed for changes in the diurnal cycle, seasonal variations, and the yearly tendencies. Ozone data was obtained from AIRMAP observations at Thompson Farm (TF) and Castle Springs (CS). We examined ozone trends in various aspects and also calculate the days of high-ozone. The definition of high-ozone-day is according to the EPA ozone standards. We are now studying the impact of meteorology and climate change to air quality by utilizing the decadal ozone variations in more details.