

Plug-and-play web-based visualization of mobile air monitoring data

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The collection of air measurements in real-time on moving platforms, such as wearable, bicycle-mounted, or vehicle-mounted air sensors, is becoming an increasingly common method to investigate local air quality. However, visualizing and analyzing geospatial air monitoring data requires advanced data analysis skillsets that limit participation in data analysis to few individuals. EPA's Real-Time Geospatial (RETIGO) Data Viewer web-based tool is a new program that reduces the technical barriers to visualize and understand geospatial air data time series, with applicability to any air monitoring data set (including multiple pollutants measured in parallel) collected on a moving platform. The RETIGO tool, with anticipated public availability in the fall of 2014, provides the user the ability to upload geospatial air pollution time series data and explore these data over time and space. The program provides ease of data import and gives the user several options to reduce large datasets (i.e., >1000 rows) for easier viewing. In addition to overlaying the data on a map and as a time series, RETIGO also allows the user to draw a hypothesized point or line source location and computes air concentration versus distance to the source. The web interface allows the user to select a portion of the geospatial data by drawing a boundary box, allowing a portion of the time series or a specific area of interest to be isolated. The user may also opt for RETIGO to import and display ancillary data, including ozone and PM_{2.5} readings (via AirNow) as well as summarizing the nearest available meteorology data (via World Meteorological Organization) corresponding to the sampled data timeframe. Finally, RETIGO will provide ease of compatibility with EPA's community-focused exposure and risk screening tool (C-FERST), with a custom output option allowing follow-on exploration of the local environment with C-FERST.