**Figure 1:**

Figure 1 includes a series of line graphs and scatter plots showing the observed vs. predicted PM$_{2.5}$ concentrations over different years with corresponding $R^2$ and RMSE values. The graphs illustrate the performance of the prediction models for PM$_{2.5}$ concentration in Beijing and Shanghai from 2008 to 2013.

- **Graph (c):** Observed PM$_{2.5}$ vs. Predicted PM$_{2.5}$ for Beijing (2008-2009), $R^2=0.74$, RMSE=39.20.
- **Graph (d):** Observed PM$_{2.5}$ vs. Predicted PM$_{2.5}$ for Beijing (2009-2010), $R^2=0.70$, RMSE=45.61.
- **Graph (e):** Observed PM$_{2.5}$ vs. Predicted PM$_{2.5}$ for Beijing (2010-2011), $R^2=0.73$, RMSE=46.64.
- **Graph (f):** Observed PM$_{2.5}$ vs. Predicted PM$_{2.5}$ for Beijing (2011-2012), $R^2=0.79$, RMSE=41.19.
- **Graph (g):** Observed PM$_{2.5}$ vs. Predicted PM$_{2.5}$ for Beijing (2012-2013), $R^2=0.81$, RMSE=33.77.
- **Graph (h):** Observed PM$_{2.5}$ vs. Predicted PM$_{2.5}$ for Shanghai (2012-2013), $R^2=0.79$, RMSE=17.04.

**Figure 2:**

A scatter plot showing the relationship between observed and predicted PM$_{2.5}$ concentrations for Beijing (top) and Shanghai (bottom) with linear regression lines and corresponding equations.

- **Beijing (a):** $y=0.79x+15.05$, $R^2=0.74$, RMSE=41.57.
- **Beijing (b):** $y=0.73x+14.51$, $R^2=0.79$, RMSE=17.04.

These graphs and plots demonstrate the effectiveness of the prediction models in estimating PM$_{2.5}$ concentrations.