**Virus-Weighted Historical Average Model Documentation**

*Motivation:*

Influenza seasons in the United States are often characterized as predominated by either H1 or H3 type viruses. Anecdotally, seasons dominated by particular influenza A types have very different dynamics, so combining information from all virus types to produce an overall historical average potentially misses out on information that could be of use in forecasting.

*Construction:*

Subtype specific historical models were created by weighting each season’s contribution to the historical model by the final % of A viruses within that subtype. The weighting is static for each season and does not reflect temporal changes in virus composition throughout the season.

From these subtype-specific historical curves, generate forecasts by taking the probabilistic forecast from each curve and weighting by the cumulative subtype percentages to date in that season.