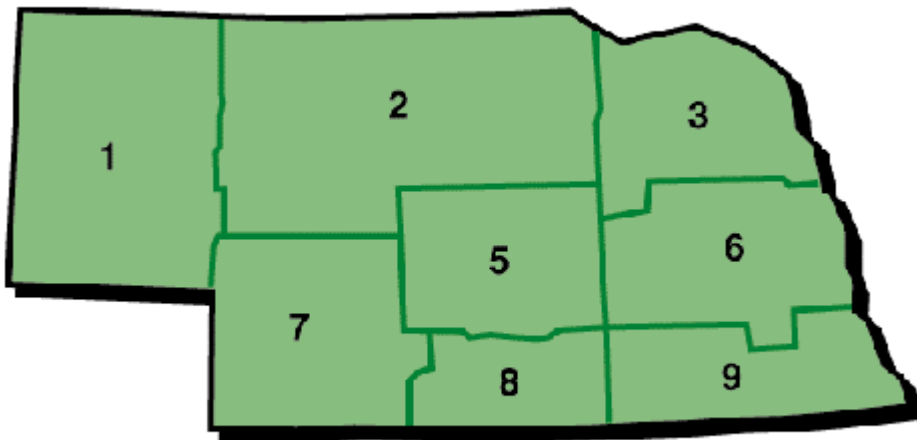


Evaluation of Historic Precipitation Data by Climate Division in checking for Long-Term Trends.

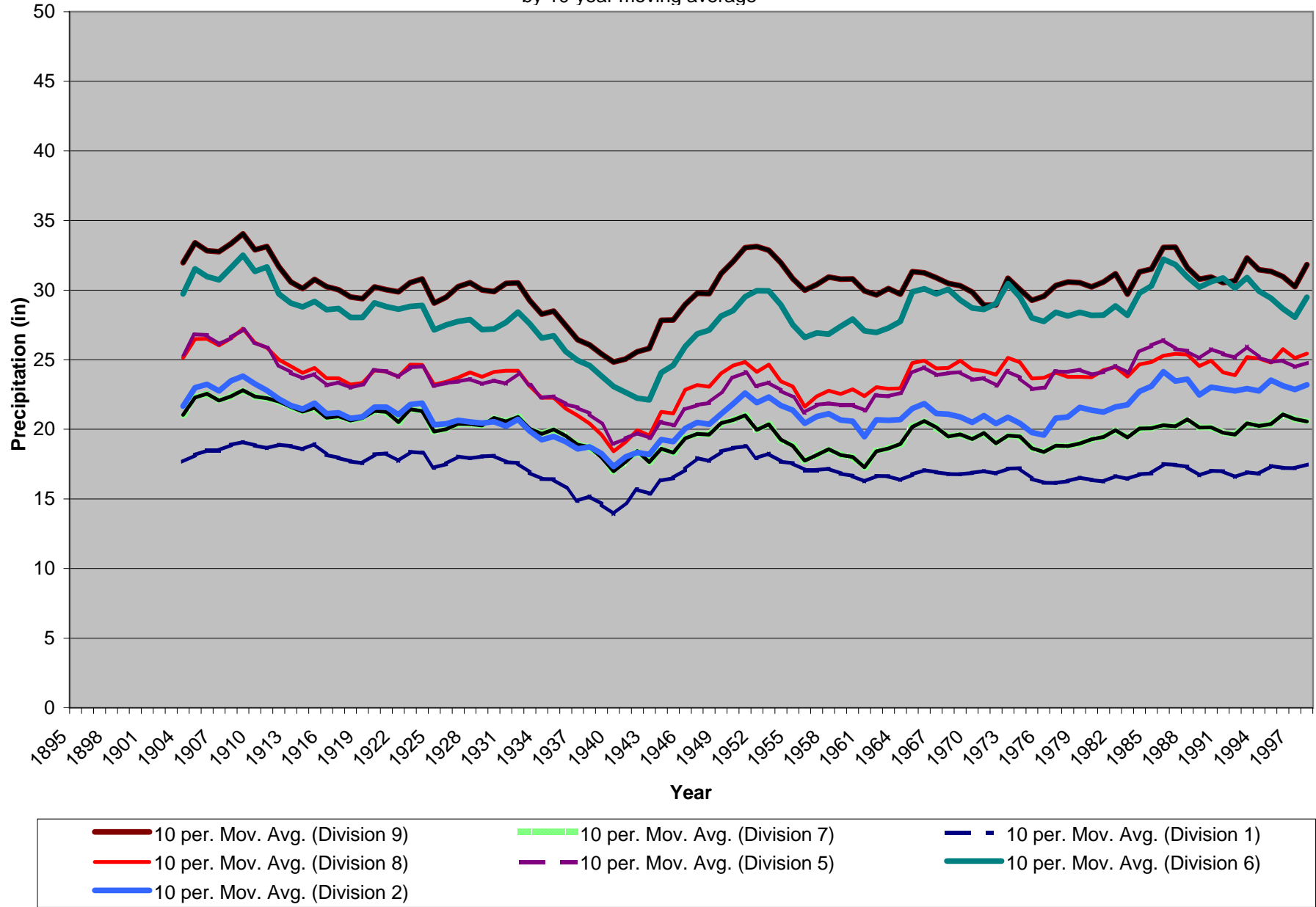
-Steve Peterson, CNPP&ID

In order to determine whether precipitation in Nebraska was subject to long-term trends, 1895-1998 precipitation data were retrieved from the NOAA web site for Nebraska climate divisions 1,2, 5-9. Monthly values were summed by year, and plotted with a 10-year moving average. The comparison of the 10-year moving average plots for all the divisions shows that while the trendlines vary slightly between areas, the same general trends are seen in every data set. For example, a general decrease in precipitation (around 5 inches at the maximum for the most divisions) is observed between about 1933 to 1948 in every data set. Other smaller changes are generally observable across data sets in most cases. Additional plots show the average for the total record, the yearly departure from average, and the cumulative departure from average. The cumulative departures from average plots are particularly interesting, as they suggest that most areas have been subject to a precipitation deficit since the 1930's. This deficit grew during the 1950's but has been undergoing a gradual recovery thereafter. Most areas show trends of significant recovery in the 1990's. Observed variations will need to be addressed during transient modeling.

Nebraska Climate Divisions

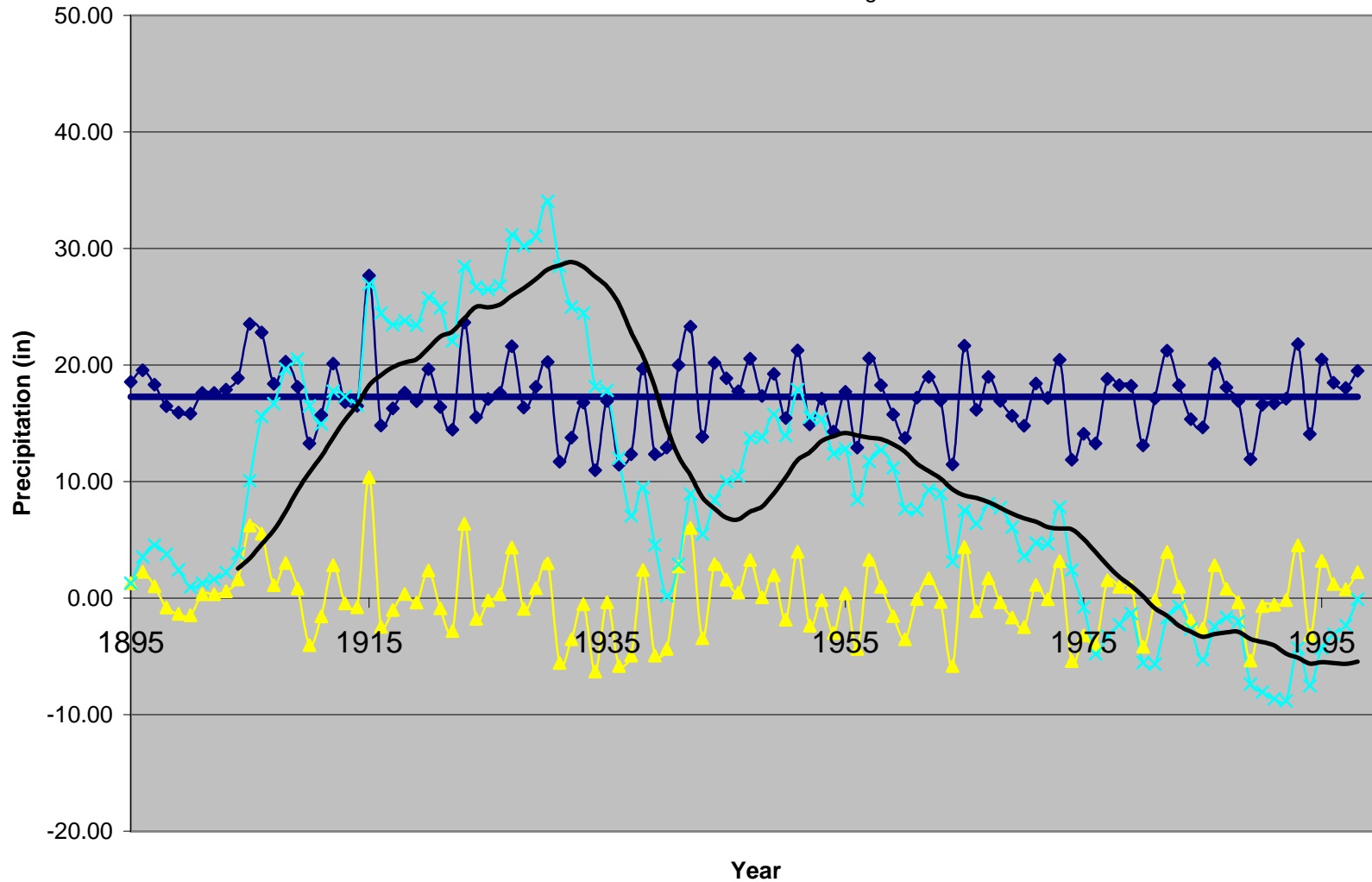


Comparison of Division Precipitation Data by 10-year moving average



Division 1 Precipitation Data

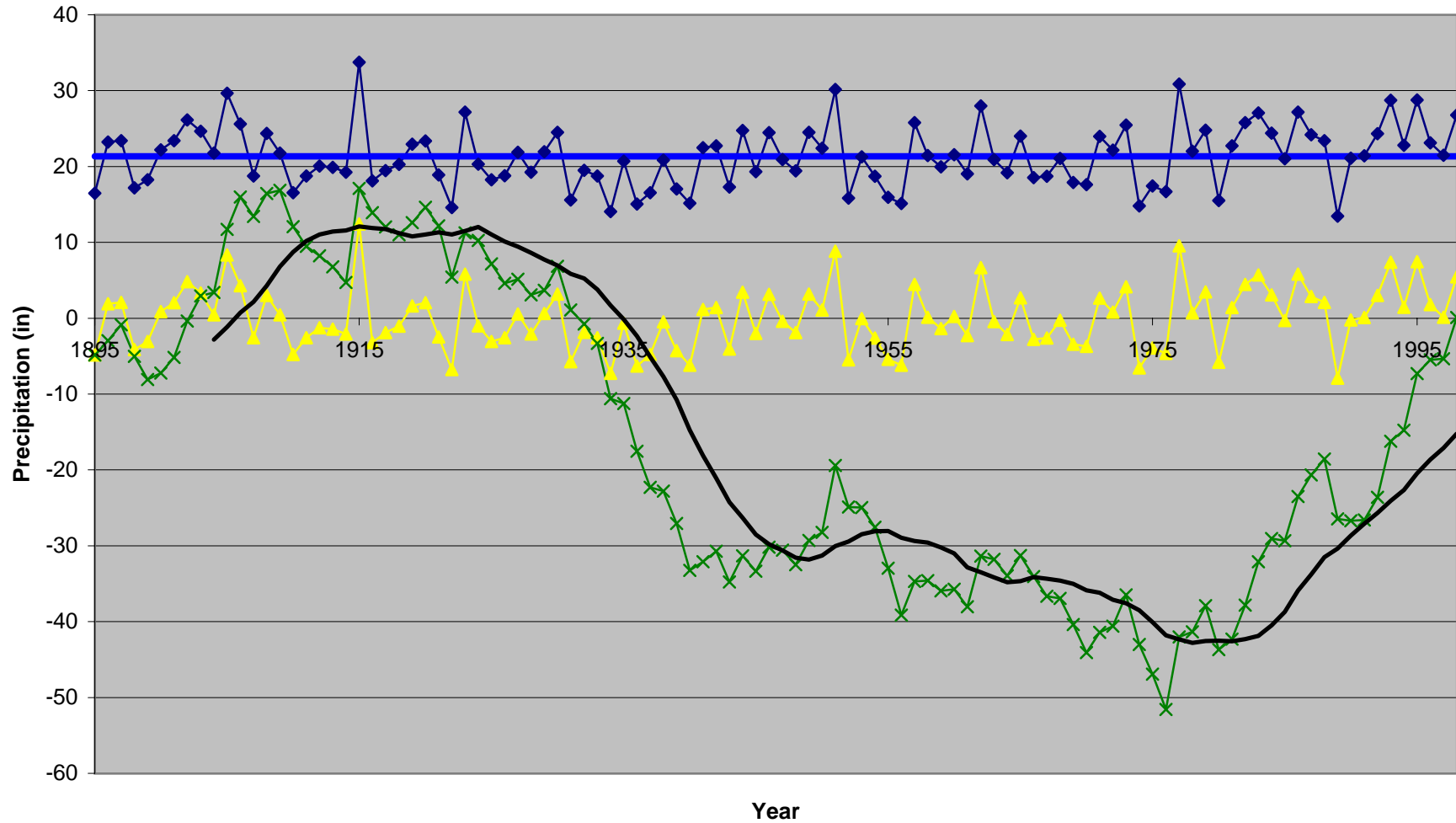
with Cumulative Departure from
total record average



▲ diff from ave ◆ Record average ◆ Data ✕ Cumulative Departure — 10 per. Mov. Avg. (Cumulative Departure)

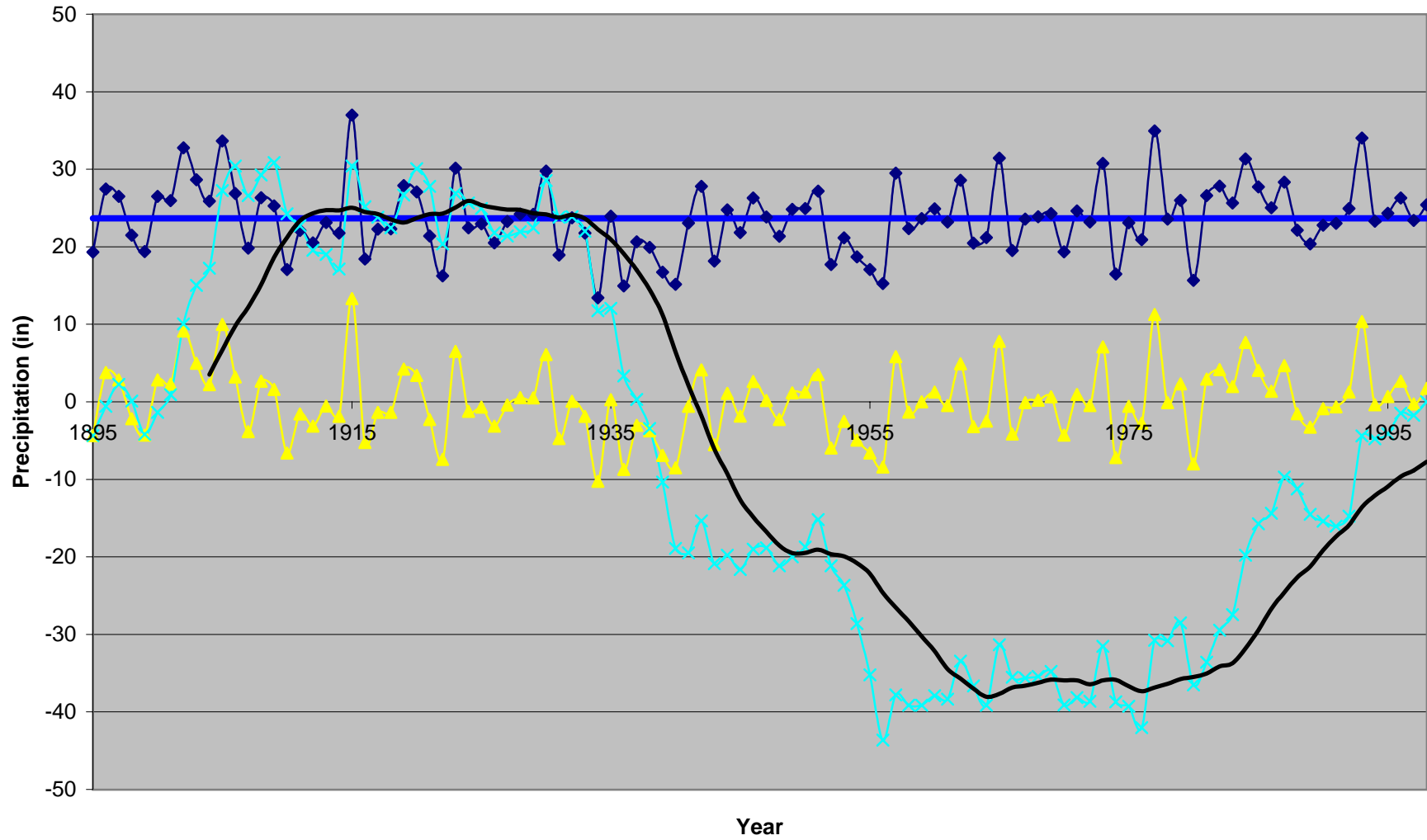
Division 2 Precipitation Data

with Cumulative Departure from Average



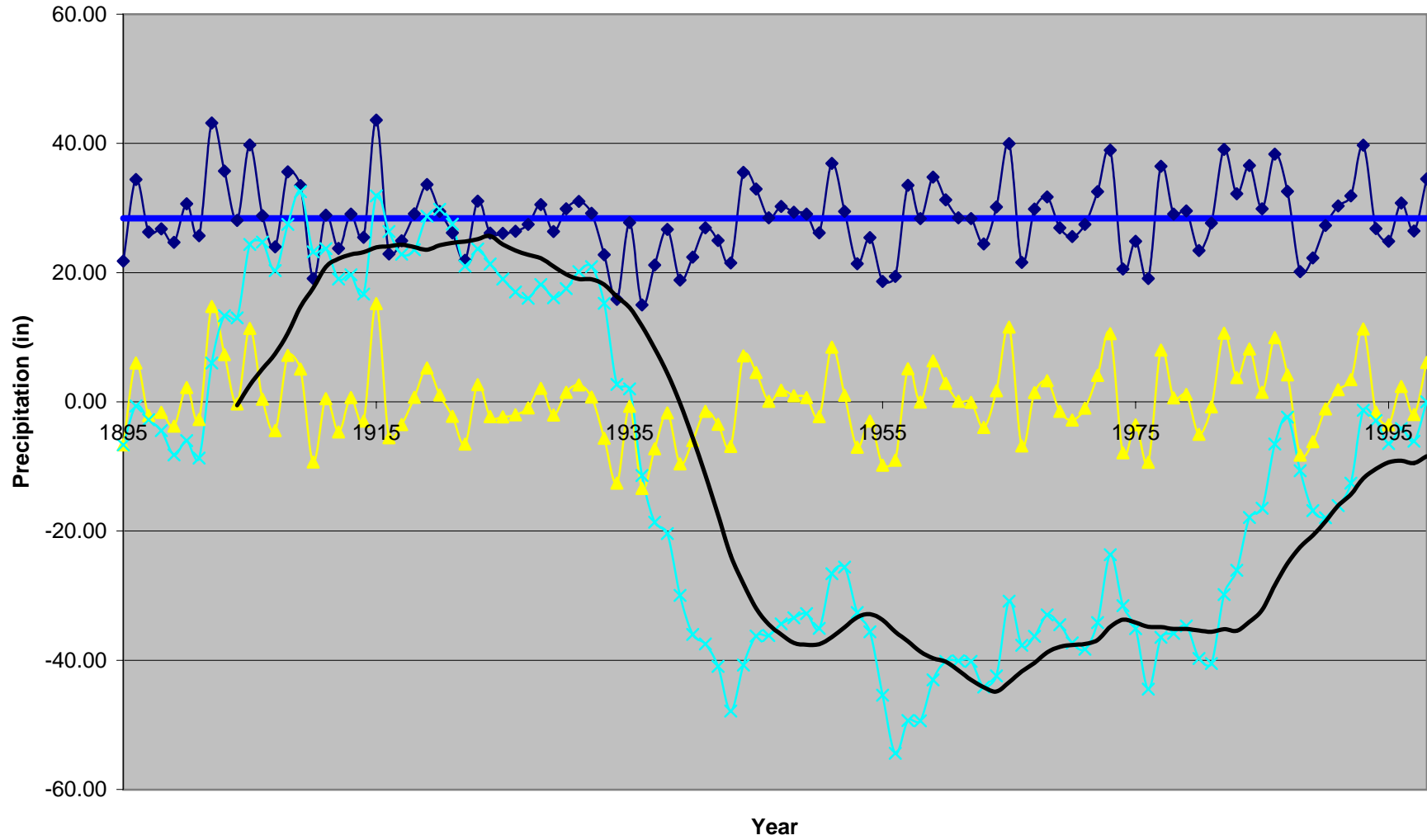
—◆— data —■— tot ave —▲— diff from ave —×— cumulative — 10 per. Mov. Avg. (cumulative)

Division 5 Precipitation Data



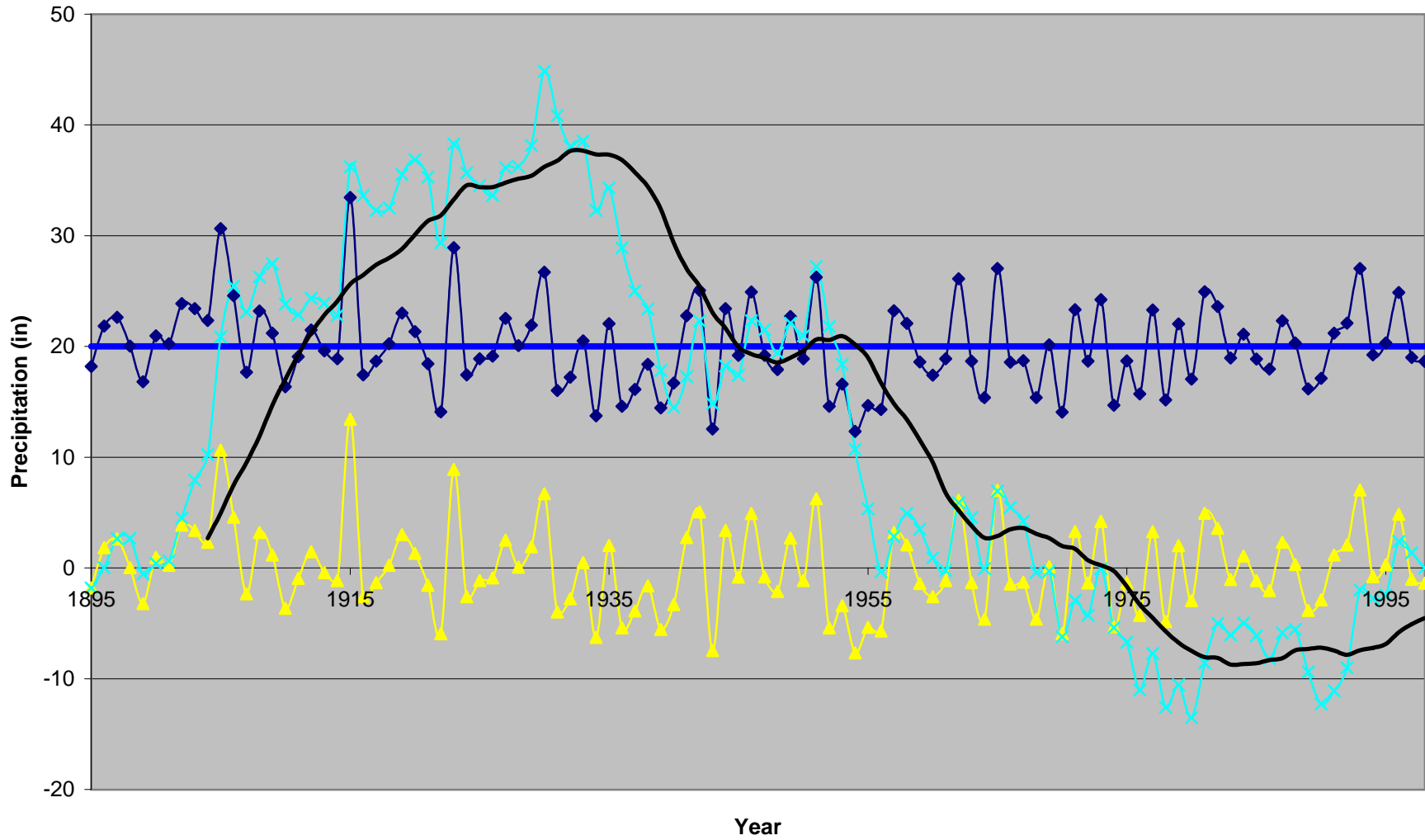
—◆— data —■— tot ave —▲— diff from ave —×— cumulative — 10 per. Mov. Avg. (cumulative)

Division 6 Precipitation Data



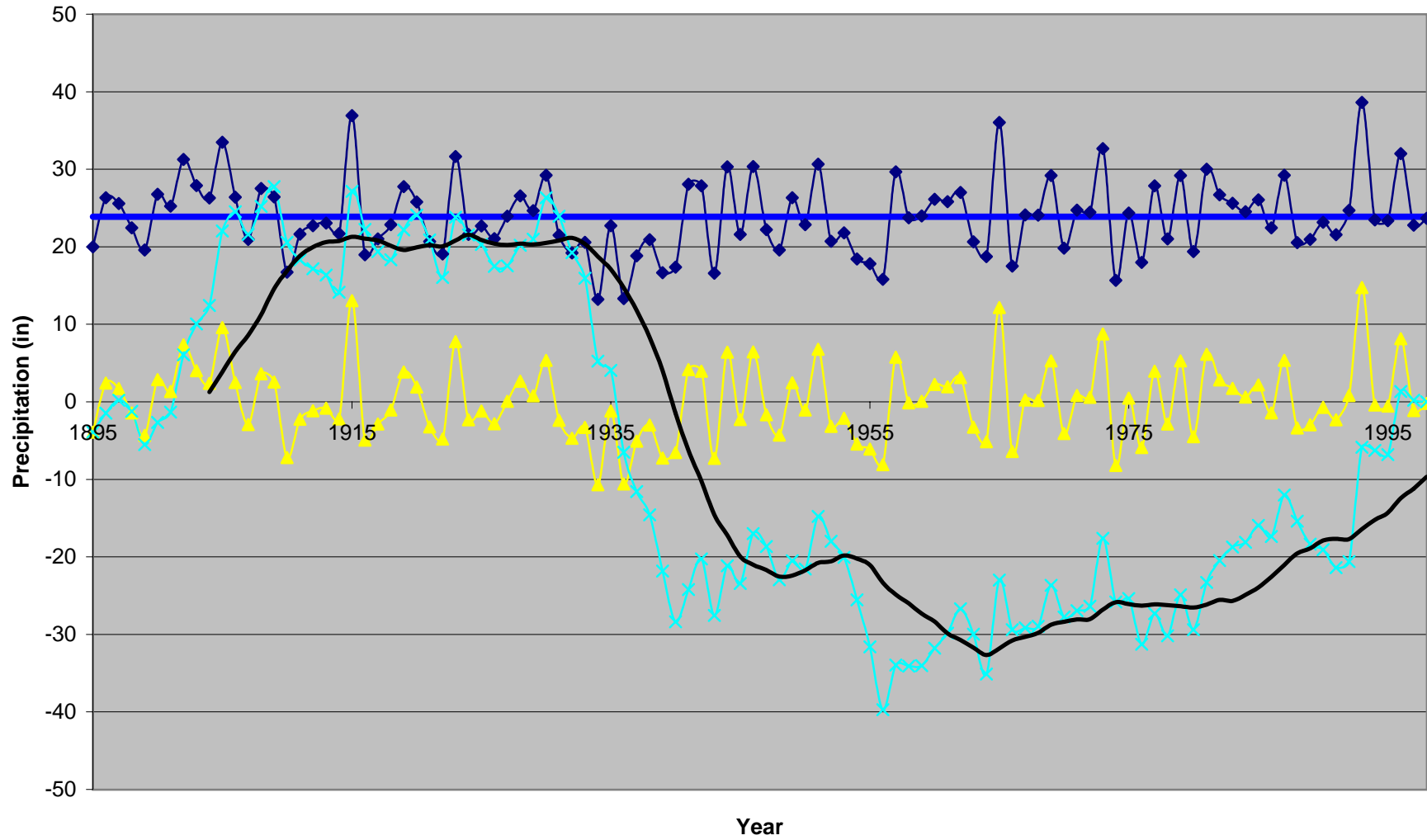
—◆— data —■— tot ave —▲— diff from ave —×— cumulative — 10 per. Mov. Avg. (cumulative)

Division 7 Precipitation Data



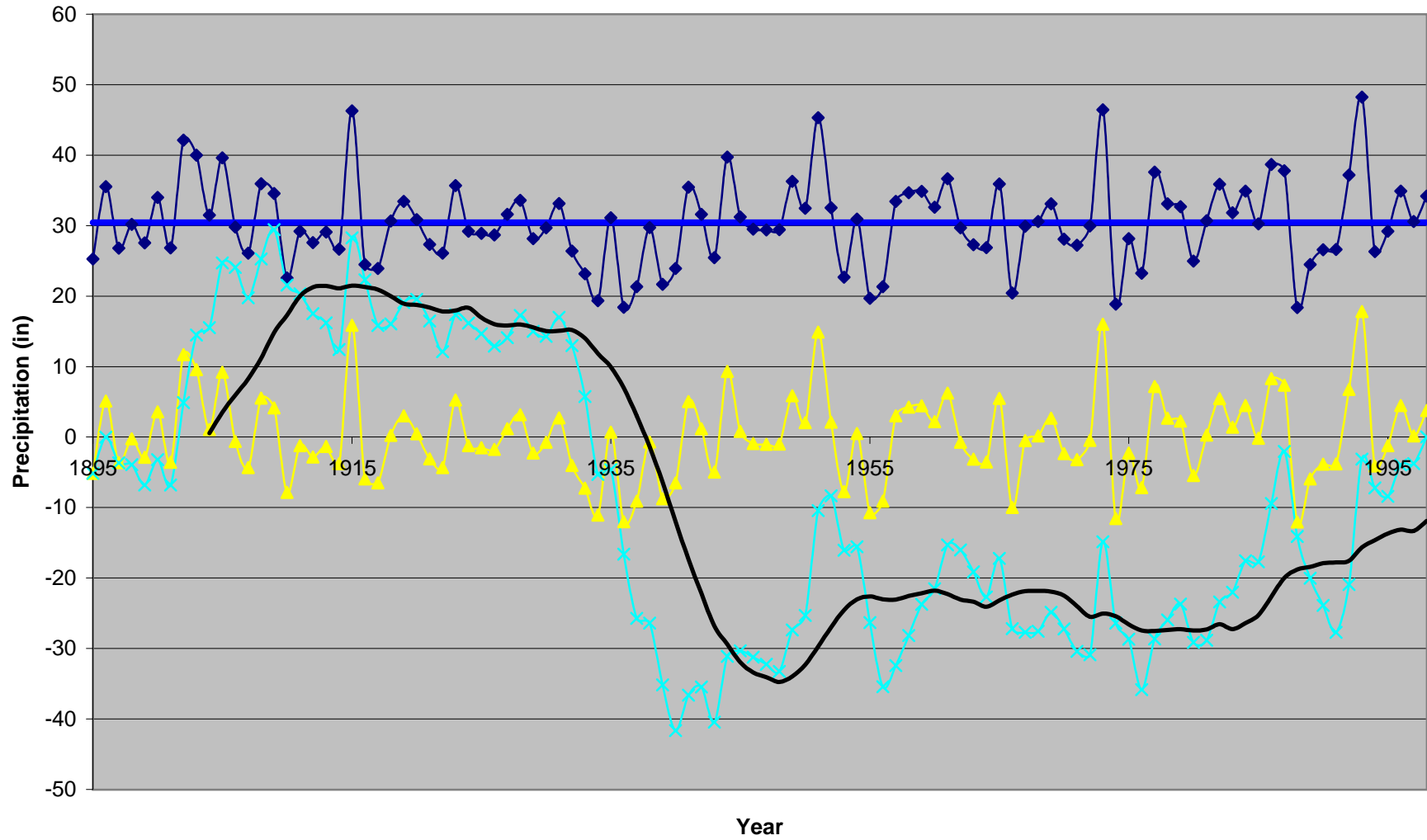
—◆— data —■— tot ave —▲— diff from ave —x— cumulative — 10 per. Mov. Avg. (cumulative)

Division 8 Precipitation Data



—◆— data —■— tot ave —▲— diff from ave —×— cumulative — 10 per. Mov. Avg. (cumulative)

Division 9 Precipitation Data



—◆— data —■— tot ave —▲— diff from ave —×— cumulative — 10 per. Mov. Avg. (cumulative)

