

4/2/2014 Ether

See Figure 1 below, based on
Twitter data 3/30 11:22:06 Weeks 1 through 5,
5736 Qual Matches involving 2407 teams.

$$A*x = b + \varepsilon$$

A is the (binary) design matrix of the alliances,

b is the vector of unpenalized alliance scores,

x is the (computed) vector Team scores,

$\varepsilon = A*x - b$ is the vector of residuals; it's the difference between the actual alliance scores (b) and the alliances scores computed using the x vector of computed Team scores.

The L2 curve is for residuals based on an x vector computed using a least squares merit function (minimum L2 norm). This is the standard computation used on CD.

The L1 curve is for residuals based on an x vector computed using a least absolute deviation merit function (minimum L1 norm). This vector minimizes the sum of the absolute values of the residuals. It is less affected by outliers than L2.

The Avg curve is for residuals based on an x vector computed as a simple average of each team's scores.

As can be seen from the curves:

41.5% of the alliance scores computed from the L1 x vector
fall within +/-10 points of the corresponding actual alliance score.

31.2% of the alliance scores computed from the L2 x vector
fall within +/-10 points of the corresponding actual alliance score.

21.1% of the alliance scores computed from the Avg x vector
fall within +/-10 points of the corresponding actual alliance score.

Figure 1

