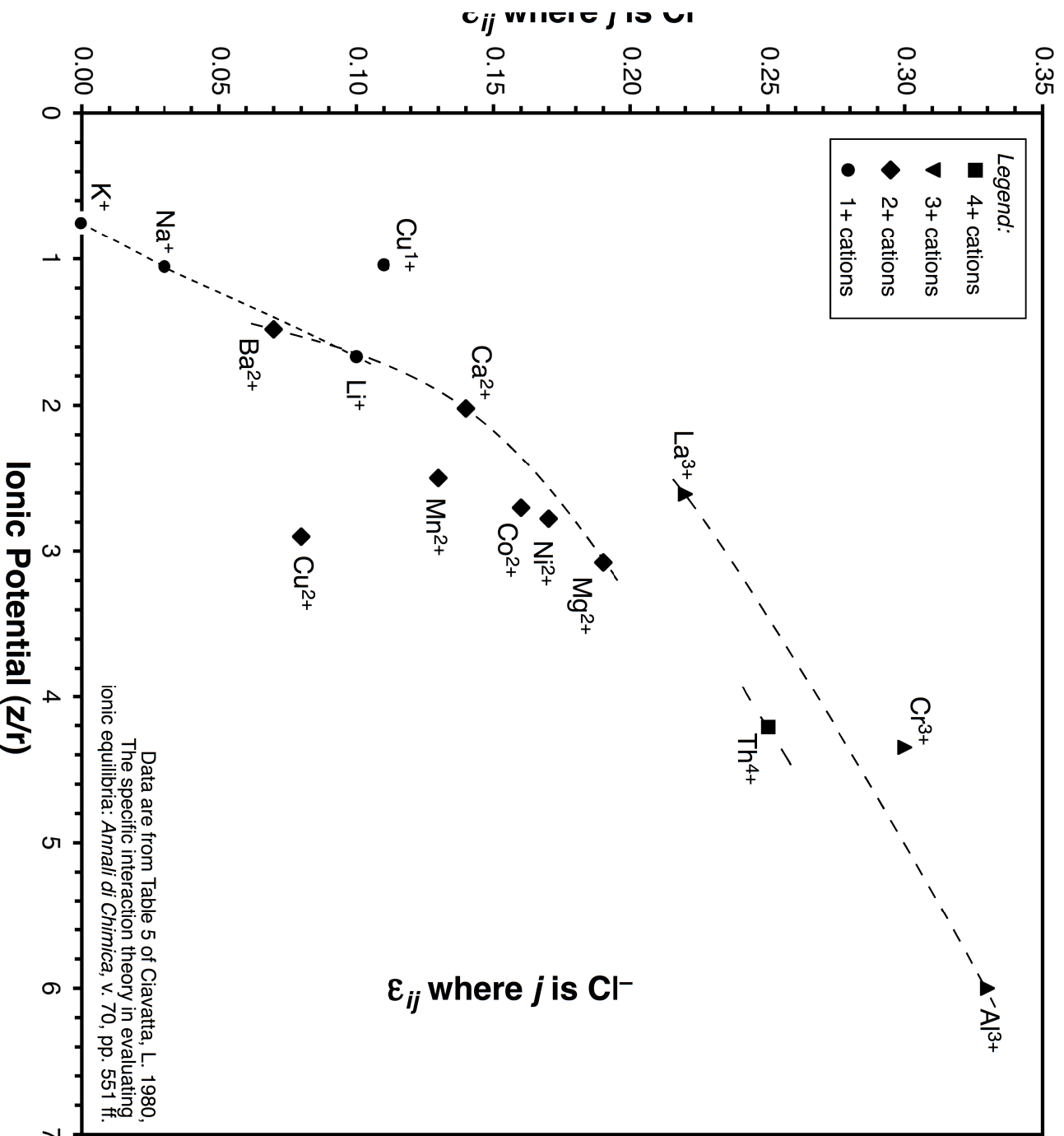


## Activity and activity coefficients VII: specific ion interaction constants



Part VI of this series described an approach for estimating activity coefficients that used specific ion interaction theory. This approach sums terms for the interaction of the ion of interest with all the counterions in the solution. In most presentations, the term specific to interaction of cation  $i$  and anion  $j$  is represented by  $\epsilon_{ij}$ .

The plot at left shows values of  $\epsilon_{ij}$  where  $j$  is Cl<sup>-</sup>, with the cations plotted according to their ionic potential (charge ÷ radius). Symbols for hard cations of like charge are linked by dashed lines. Overall, the plot shows that  $\epsilon_{ij}$  is correlative with ionic potential. Intermediate to soft cations commonly deviate from the trends defined by the hard cations, as might be expected from presence of outer-shell electrons around the intermediate to soft cations.