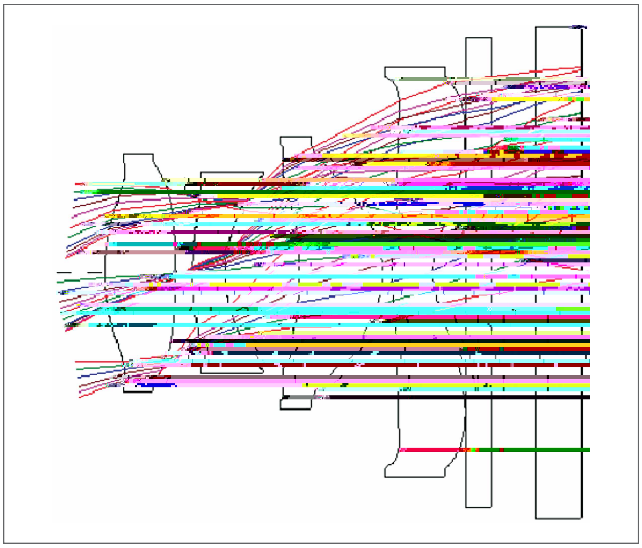
Q-Type Polynomials Enable Superior Design Optimization and Tolerancing

- Q^{bfs} polynomials for controlling aspheric slope departure
- Q^{con} polynomials for determining aspheric sag departure
- Basis members are independent (orthogonal)
- Offer many advantages over standard power-series formulation

Full support in CODE V® for aspheric surfaces based on mathematical formulations published by Dr. G.W. Forbes of QED Technologies enables superior design optimization and tolerancing, helping ensure a cost effective, manufacturable system.



The use of aspheric surfaces in optical systems is becoming increasingly important as lens systems become more compact and complex, and image resolution becomes ever more critical. This increasing use of aspheric components is accompanied by an increasing need to control their production cost. Unfortunately, the traditional methods of aspheric design present inherent complications when it comes to manufacturing and testing of these components.

Dr. G.W. Forbes of QED Technologies has published new mathematical formulations for rotationally-symmetric aspherical surfaces that offer several advantages over the traditional polynomial-based aspheres (for example, CODE V's Asphere or ASP-type surface). Major advantages of these new forms over the classic power-series description include:

- The terms can be viewed in a physically significant way: the magnitude of the respective coefficient is directly related to slope or