

This work presents a novel closure for the spherical harmonics method that corrects many of the shortcomings of the closures previously developed. In slab geometry we show that it can solve the plane source problem well without the drawbacks other methods have in problems such as the two-beam problem.

Another important aspect of our work is that we present an analysis of the squared-residual arising from any closure. Using this residual we derive our closures and it gives a framework for the creation and our analysis of any future closure for the spherical harmonics system.