

1163-39-742

**Ronald Mickens\*** ([rmickens@cau.edu](mailto:rmickens@cau.edu)), Clark Atlanta University, Atlanta, GA 30314. *What is a Nonstandard Finite Difference Scheme?*

Since its creation by Mickens, the NSFD methodology “stated rules” have evolved to an ever decreasing set of requirements. At the present time, there is only one restriction that is needed and it is the “Principle of Dynamic Consistency (PDC)”, appropriately interpreted. This presentation considers issues related to “What is a valid NSFD scheme?” and the interplay among knowledge of the original system, its mathematical models, and the construction of discretizations via the PDC. An elementary, but nontrivial example is used to fully illustrate the fundamental issues and their resolution. (Received September 12, 2020)