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|       | authors          | <ul style="list-style-type: none"><li>Moujin Zhang</li><li>Shin-Shan Yu</li><li>Sin-Chung Chang</li><li>Isaiah Blankson</li></ul> | authors          | <ul style="list-style-type: none"><li>Moujin Zhang</li><li>S. Yu</li><li>Sin-Chung Chang</li><li>I. Blankson</li></ul>   | DUPLICATES | 29 |
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|       | abstract         |   | abstract         | In this paper, we introduce a new numerical approach to solve the MHD equations by the space-time Conservation Element and Solution Element (CESE) method. By treating space and time as one entity, the ideal MHD equations are formulated in a space-time integral form, and are solved by the CESE method. As a contrast to the modern upwind methods, no reconstruction procedure or Riemann solver is needed in the present approach. The computational logic and operational count of the present approach are much simpler and more efficient. Preliminary results of propagating MHD shock and expansion waves in one and two spatial dimensions showed remarkable numerical resolution. |            |    |
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