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| Nº línea |  |
| 1 | **An open source hp-adaptive discontinuous Galerkin finite element** |
| 2 | **solver for linear elasticity.** |
| 3 | **Abstract** |
| 4 | Open source codes are a key ingredient to greater research integrity and |
| 5 | accountability in computational science and engineering. However, many of these |
| 6 | codes have not been developed with modification of the base code as their |
| 7 | primary consideration. Existing codes may provide an environment for researchers to |
| 8 | quickly test out theirideas under different physical conditions in a high level way but |
| 9 | they are not always ideal for those interested in the development of numerical |
| 10 | methods. The majority of existing open source discontinuous Galerkin finite element |
| 11 | codes are written in C++ and there is a significant learning curve for junior researchers |
| 12  13  14  15  16 | to adopt, understand and modify the underlying code/routines. This paper presents an open source hp-adaptive discontinuous Galerkin finite element code written in  MATLAB that has been explicitly designed to make it easy for users, especially  MSc/PhD-level researchers, to understand the method and implement new ideas  within the core code. Although the code is focused on solving problems in linear  elasticity, it is straightforward to modify it to solve other physical equations. |
| 17 | **Abstract** |
| 18 | **Keywords :** Open source software MATLAB Discontinuous galerkin finite elements Linear elasticity hp-Adaptivity Researcher development. |
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**SNEE en resumen**

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| **Linea** | **SNEE en LE (base)** | **SNEE en L1 (meta)** |
| **1** | open source hp-adaptive discontinuous | código abierto hp-adaptable discontinuo |
| **2** | linear elasticity | elasticidad lineal |
| **4** | Open source codes | Códigos Fuente abiertos |
| **4** | key ingredient | Ingredient clave |
| **5** | Computational sciencie and engineering | Ciencias computacional e ingeniería |