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A constitutive model for metal plastic deformation at micro/meso scale with consideration of grain orientation and its evolution

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**Highlights:**

- EBSD tests were conducted on copper sheets subjected to plastic deformation.
- The grain orientation effect on micro/meso scale deformation behavior was revealed.
- A Hall-Petch based constitutive model was proposed to include the effect.
- FE simulations considering polycrystal structure were performed to verify the model.

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