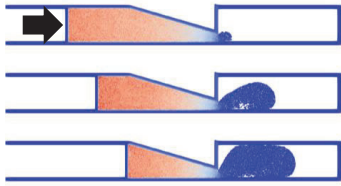


# Moving Particle Hydrodynamics (MPH) 法

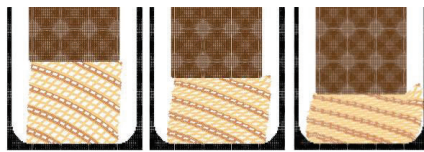


物質の動きと計算点の動きを一致させた粒子法という計算手法の1つ  
解析力学的理論と陰的アルゴリズムにより、高度な安定性を達成  
様々な材料の、自由表面・大変形問題に適用可能



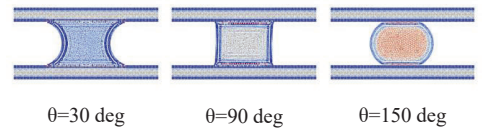
**ダイキャストシミュレーション**

近藤雅裕, 松本純一, JSCES, Paper No. 20210016.  
<https://doi.org/10.11421/jscs.2021.20210016>



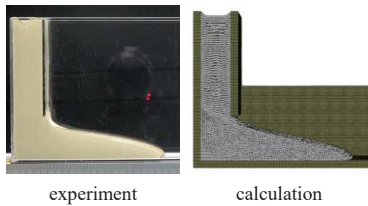
**木質材料流動成形シミュレーション**

Masahiro Kondo, Mitsuru Abe, Masako Seki, Tsunehisa Miki, Junichi Matsumoto, Particles 2023, Milan (2023) Oct.



**接触角を考慮した液架橋の計算**

Masahiro Kondo, Junichi Matsumoto, Computer Methods in Applied Mechanics and Engineering 385 (2021) 114072.  
<https://doi.org/10.1016/j.cma.2021.114072>

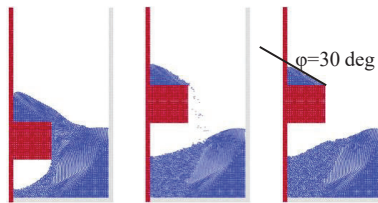


experiment

calculation

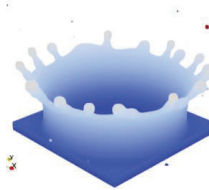
**ジオポリマー流動シミュレーション**

Masahiro Kondo, Sui Satomi, Ryo Yokoyama, Shunichi Suzuki, Nuclear Engineering and Design 431 (2025) 113731  
<https://doi.org/10.1016/j.nucengdes.2024.113731>

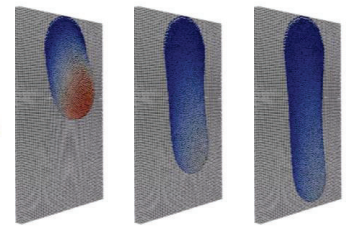


**砂の流動シミュレーション**

Masahiro Kondo, Sui Satomi, Ryo Yokoyama, Shunichi Suzuki, Kentaro Akasaki, Computers and Geotechnics 176 (2024) 106759.  
<https://doi.org/10.1016/j.compgeo.2024.106759>



**ミルククラウン & 壁面滴下の計算**  
近藤雅裕, GPU UNITE 2023



## MPH papers (open access)



[1] Masahiro Kondo, Computational Particle Mechanics 8 (2021) 69-86.

<https://doi.org/10.1007/s40571-020-00313-w>

[2] 近藤雅裕, 松本純一, JSCES, Paper No. 20210006.

<https://doi.org/10.11421/jscs.2021.20210006>

[3] Masahiro Kondo, Takahiro Fujiwara, Issei Masaie, Junichi Matsumoto, Computational Particle Mechanics 9 (2022) 265-276.

<https://doi.org/10.1007/s40571-021-00408-y>

[4] Masahiro Kondo, Junichi Matsumoto, Computer Methods in Applied Mechanics and Engineering 385 (2021) 114072.

<https://doi.org/10.1016/j.cma.2021.114072>

[5] 近藤雅裕, 松本純一, JSCES, Paper No. 20210016.

<https://doi.org/10.11421/jscs.2021.20210016>

[6] Masahiro Kondo, Junichi Matsumoto, Tomohiro Sawada, Computational Particle Mechanics (2024) 511-527

<https://doi.org/10.1007/s40571-023-00636-4>

[7] Masahiro Kondo, Sui Satomi, Ryo Yokoyama, Shunichi Suzuki, Kentaro Akasaki, Computers and Geotechnics 176 (2024) 106759.

<https://doi.org/10.1016/j.compgeo.2024.106759>

[8] Masahiro Kondo, Sui Satomi, Ryo Yokoyama, Shunichi Suzuki, Nuclear Engineering and Design 431 (2025) 113731.

<https://doi.org/10.1016/j.nucengdes.2024.113731>

## MPH programs (open source)

<https://github.com/Masahiro-Kondo-AIST/MphExplicit>

<https://github.com/Masahiro-Kondo-AIST/MphImplicit>

Thank you!