# Term Project

# Items

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- 1. 3D SPH Simulation
- 2. Mixed Themes
  - Mass-Spring(3D) + Particles(3D)
  - Mass-Spring(2D) + 2D SPH
  - Box 2D + 2D SPH
- 3. Open Themes:  Discuss with Prof.

# 1. 3D SPH

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- Basic Requirements
  - 3D SPH
  - Rendering: Lighting, Texture(Background)
- Additional Points
  - Advanced Rendering
    - Screen Space Rendering
    - Ray Tracing with Marching Cube
  - Advanced Data Structure
  - Coupling with 3D Objects

# 2. Mixed Themes

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- Basic Requirements
  - Mixed Simulation(Choose one)
    - 3D Mass-Spring + Particles(3D)
    - 2D Mass-Spring + 2D SPH
    - Box 2D + 2D SPH
  - Rendering: Lighting, Texture
- Additional Points
  - Advanced Rendering
  - Coupling X
    - Ex) Mass-Spring+Rigid Body+Fluids
  - Story

# 3D SPH + Rendering + Coupling

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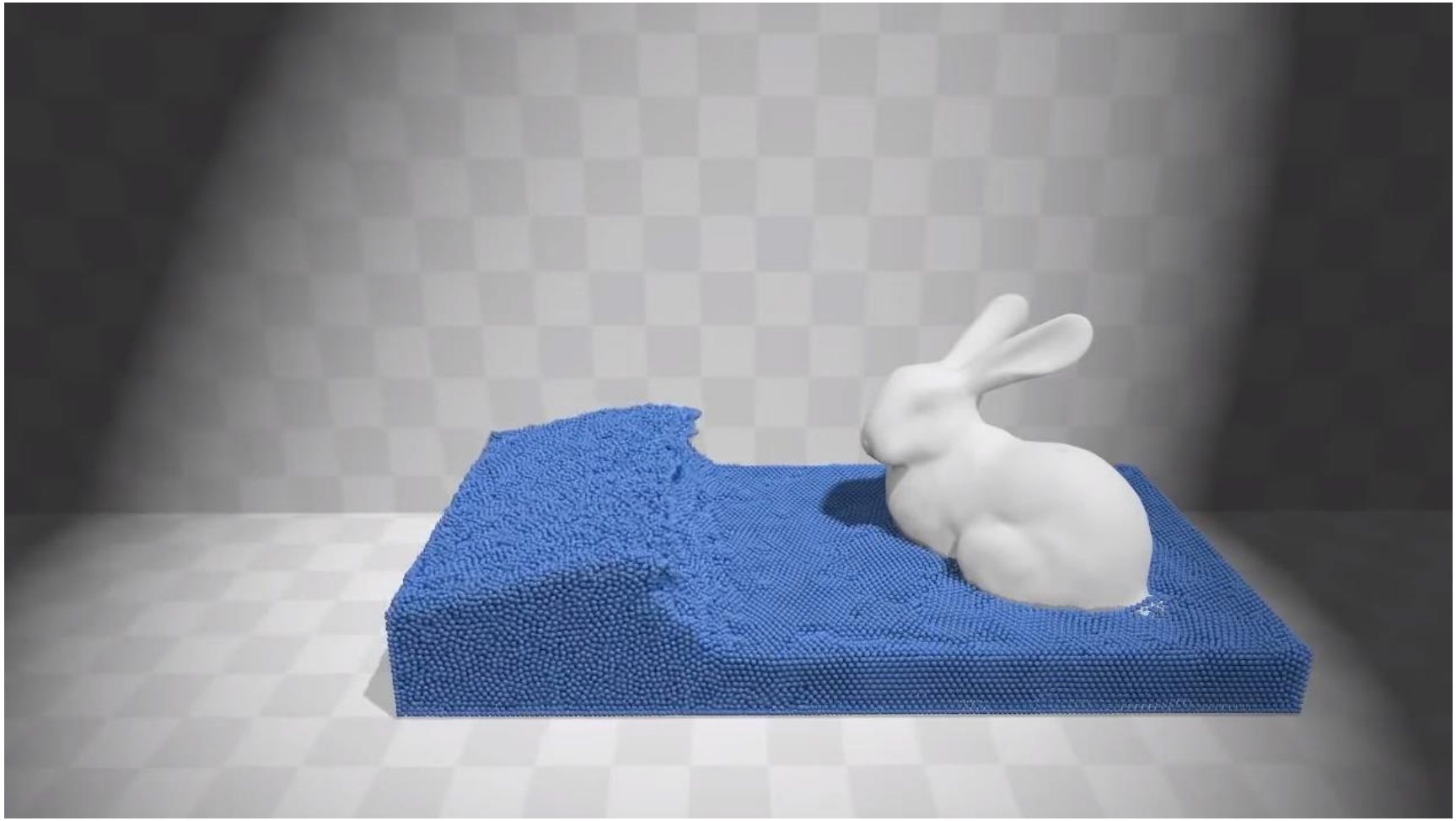

# Mass-Spring(3D) + Particles(3D)

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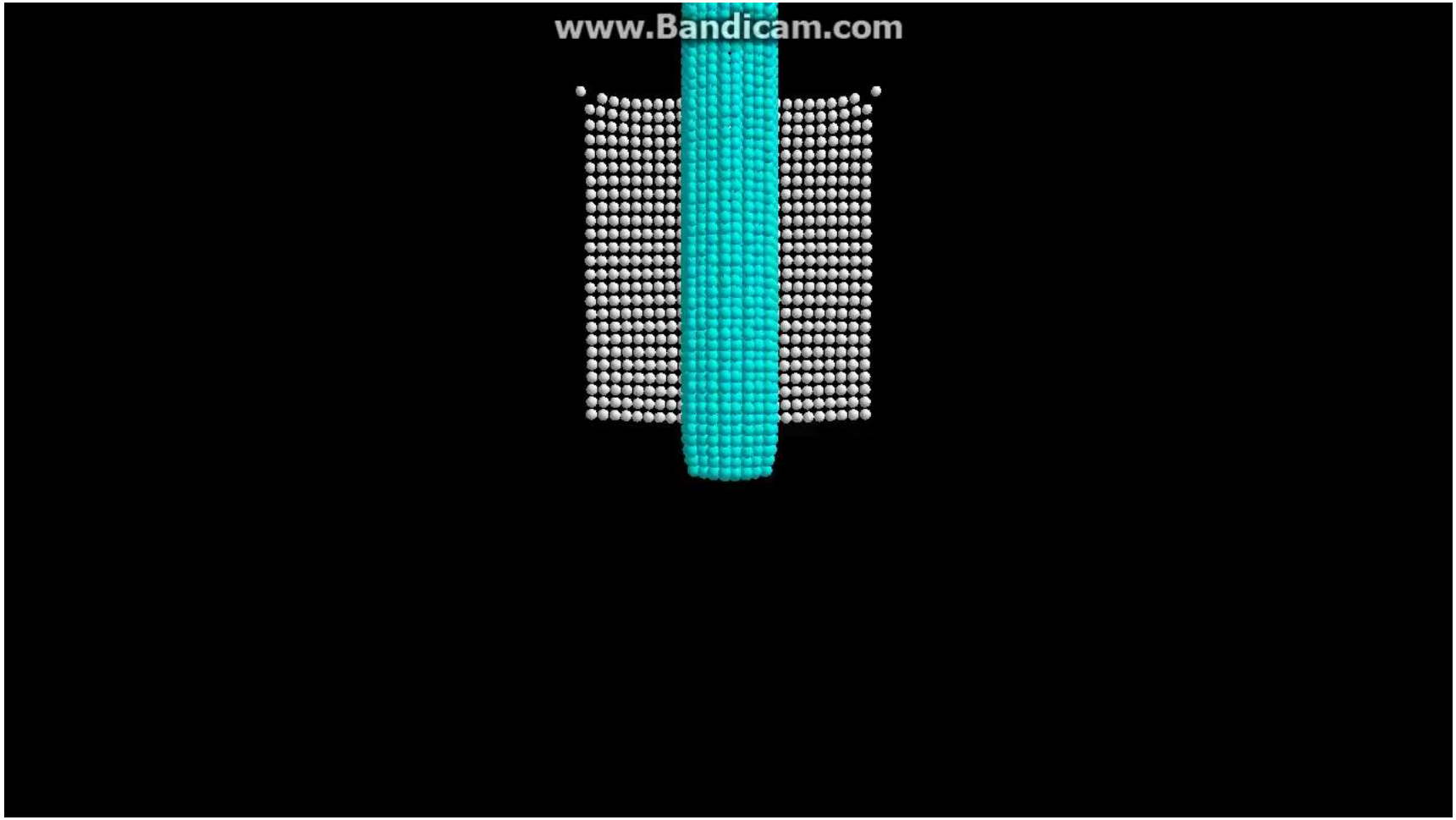

# Box2D + 2D SPH + Story

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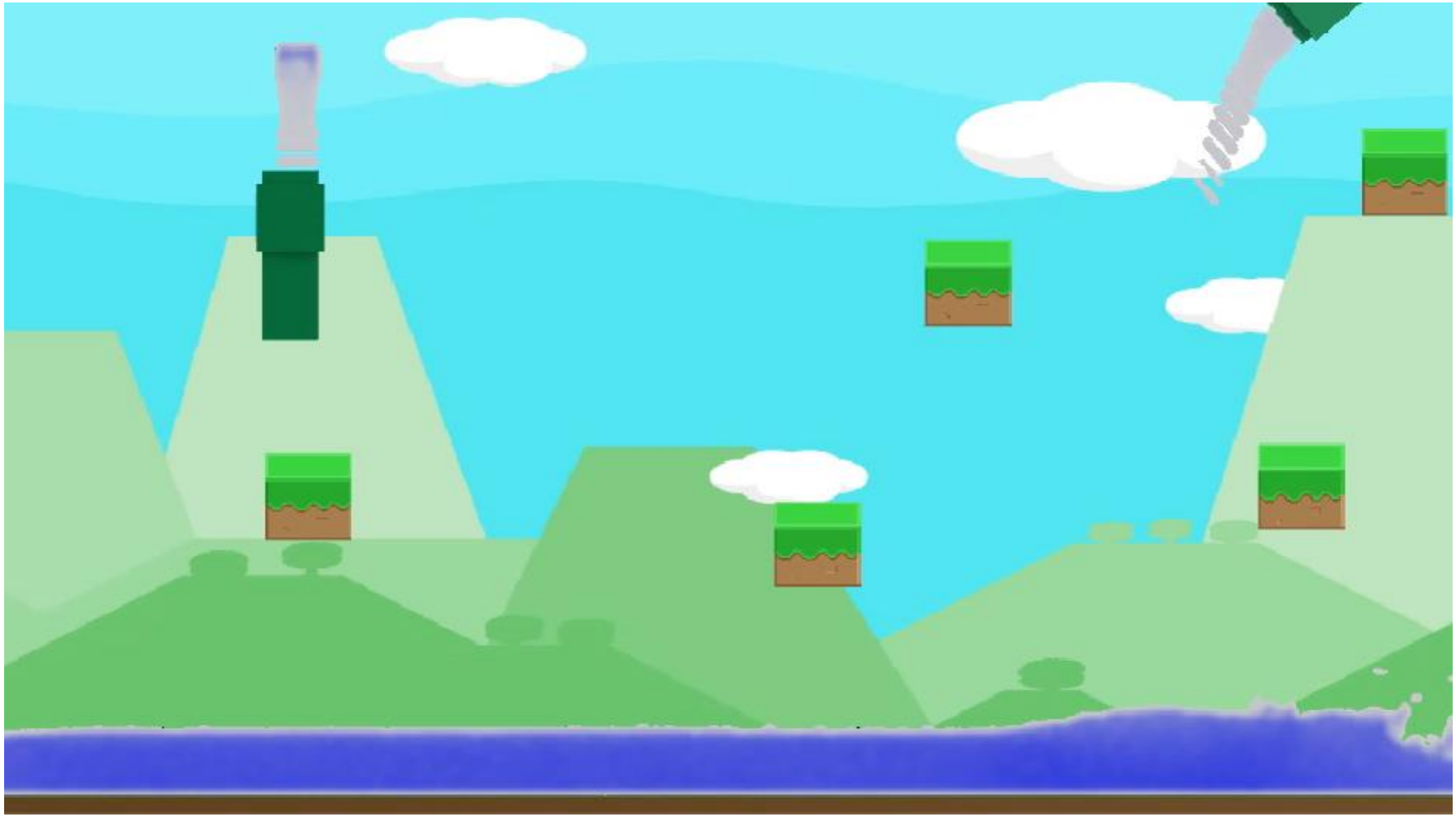

# Submission

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- **제출 기한**
  - 12/8 (일요일) 19:59 PM
- **제출 자료**
  - Power Point 발표 자료
  - 프로젝트 폴더 전체를 압축한 zip 파일
    - cpp 파일만 제출시 감점
  - 구현 사항에 대한 Report
- **제출 양식**
  - 학번_이름_Term.zip
    - @조교메일 : twoo0220@korea.ac.kr로 제출

# Professional Demos

# Mass-Spring + Particle System

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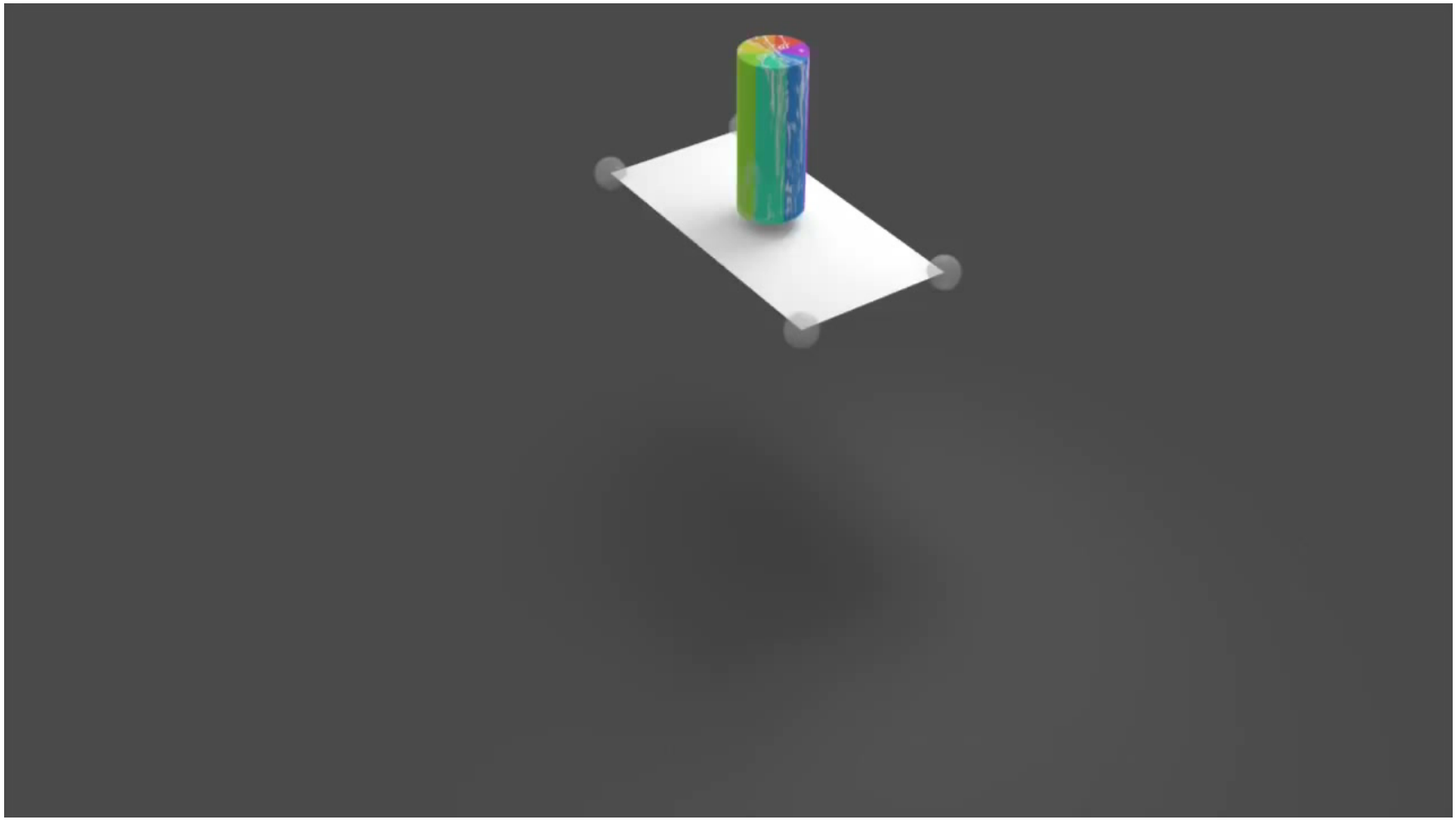

# Mass-Spring + Fluids

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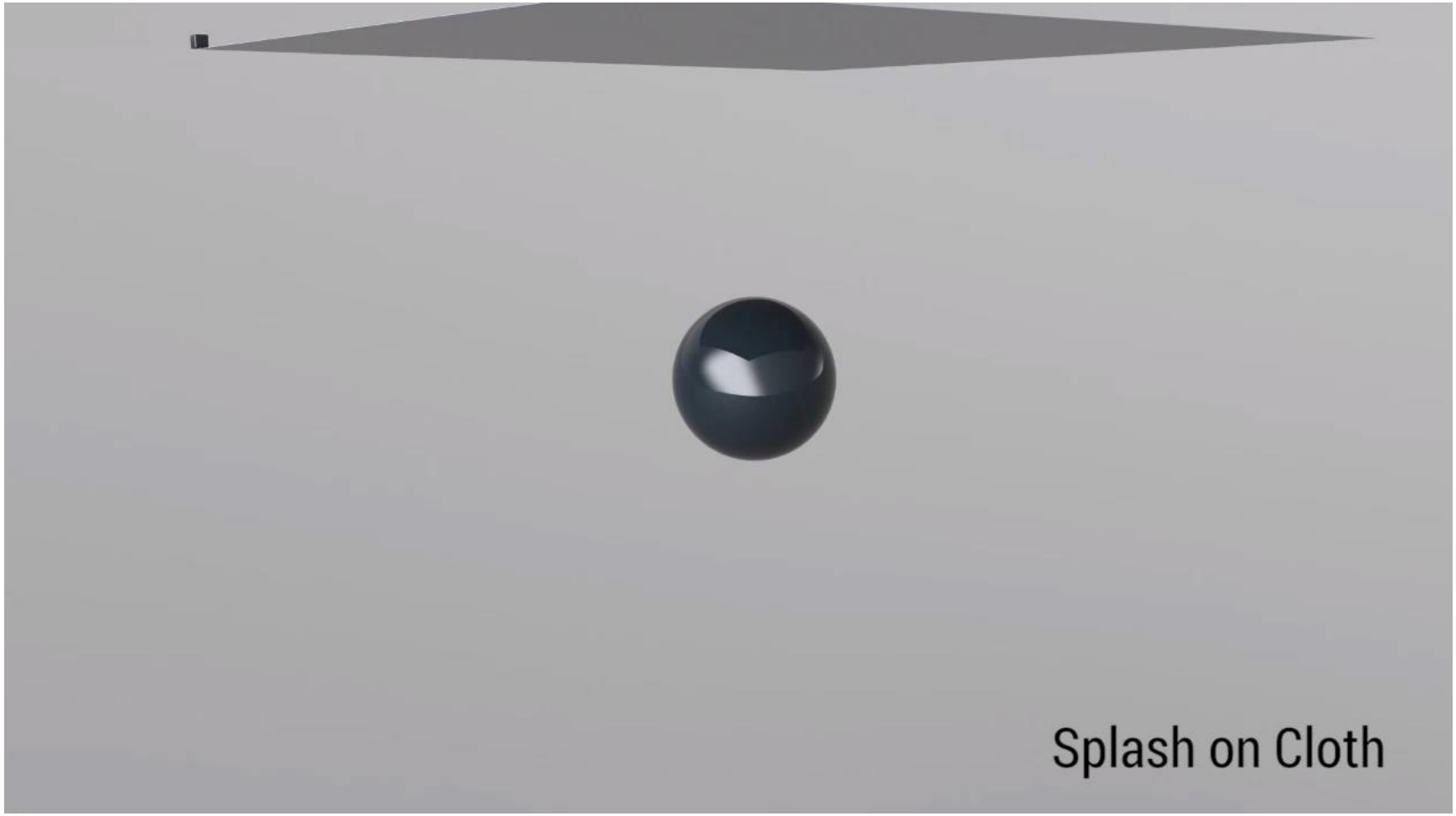

# Mass-Spring + Rigid Body + Fluids

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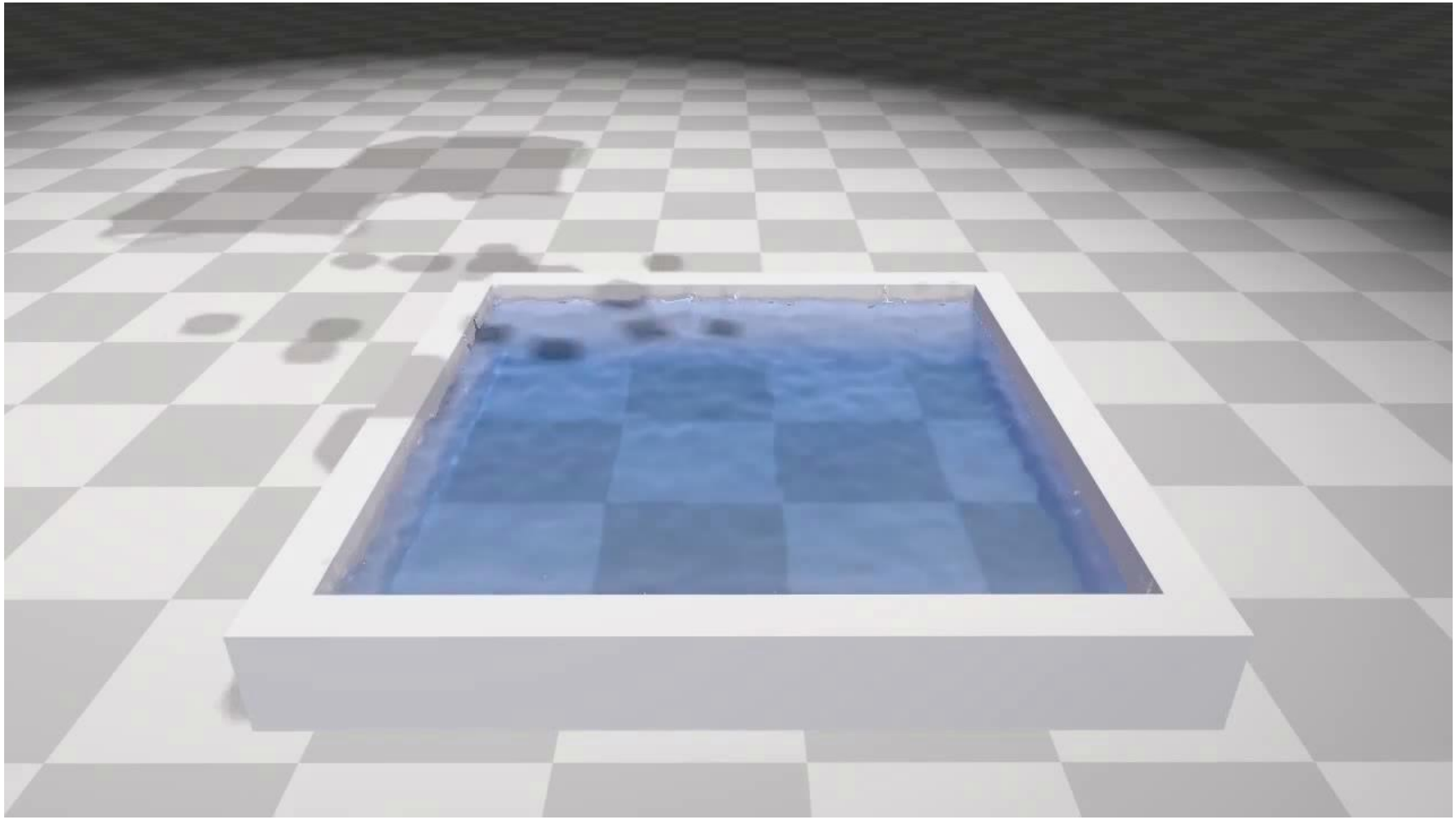

# References

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- 1. 3D SPH Simulation
  - Particle-Based Fluid Simulation for Interactive Applications
    - M. Muller(ETH Zurich) et al. / SCA 2003
- 2. Coupling Problems
  - Versatile Rigid-Fluid Coupling for Incompressible SPH
    - N. Akinci(University of Freiburg) *et al.* / TOG 2012