

The flows of granular-liquid mixtures in uniform steady conditions: a daily two-way journey from experiments to theoretical interpretation

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The case of flows over an inclined bed under uniform and steady conditions is the simplest one among those involving granular-liquid mixtures but is complex enough and important to need and attract a huge research effort. Being inspired by experimental observations or being allured by the charm of purely theoretical modeling represents a strong dichotomy. Mixing both sides requires a lot of energy and time in talking with the "dark side", with the risk of making the distances even further.

In my case, I had the opportunity to meet nice and skilled people on both sides and have been tossed by them in either direction. I liked that, and still now, after decades, I think that the possibility of doing experiments and modeling them is great. Moreover, all the tools are in your hands, and you just need to keep your friendships alive, which is not bad, from a human perspective.

I want to tell as the reality, observed from either side, can differ a lot. Approximations in obtaining theoretical solutions are common and necessary; experimental setups suffer limitations, and important measurements can be missing or not as accurate as necessary.

The conclusion is that both approaches are necessary and can also help each other to go faster in the right direction.