The Influencers Podcast: Preview

Listening to the Ocean: AI, acoustics and the future of tsunami warning with Dr Usama Kadri, Cardiff University

By James Walker

"If we had a technology to actually generate these extremely large-scale acoustic gravity waves and we also have the technology to finely tune them with the tsunami which is approaching a shoreline. In theory we can make them interact in a way that they withdraw energy from the tsunami and redistribute it over a larger space and by that we would reduce the height of the tsunami"

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Will acoustic ground waves redefine our understanding of tsunamis?

In this episode of the Influencers Podcast, IUA's Tom Hughes and Hogan Lovells' Karishma Paroha welcomed Dr Usama Kadri, Professor at Cardiff University. The IUA is a trade association representing (re)insurance companies operating in the London company market. Hogan Lovells is a leading global law firm, specialising in highly regulated sectors, offering exceptional legal services worldwide.

We hear a great deal about major scientific breakthroughs, but less about those who make these breakthroughs possible. In this episode we speak to Dr Kadri, one of the driving forces behind using acoustic gravity waves to improve tsunami forecasting. Dr Kadri has devoted his career to advancing our understanding of tsunamis, working as a Reader in Applied Mathematics at Cardiff University. In our discussion, he explores the theoretical potential of using technology to generate large-scale acoustic gravity waves, a rapidly growing area of research within the scientific community.

Dr Kadri challenges the assumptions underpinning today's tsunami modelling, including some that insurers consider foundational...

AI Forecasting, Analytical Models and their Importance

Dr Kadri's work on acoustic gravity waves is truly groundbreaking. There are exponential applications and the potential to drastically reduce the impact of

tsunamis on society. But will technological advancement and real-world use cases come to fruition over the next few years?

During the episode, Dr Kadri carefully explains the mechanics behind these invisible waves. He highlights practical changes that society and governments would expect to see should these processes be implemented on a large scale.

Through an insurance lens, AI-driven tsunami forecasting promises risk mitigation and management opportunities. Dr Kadri investigates the direct potential impacts of the technology, such as improving the reliability of CAT modelling and pricing. He also identifies the possibility that insurers may wish to integrate real-time, early warning technology into their parametric insurance solutions.

Key Learnings

The integration of AI-driven forecasting is expected to benefit the insurance industry. But like all fast-moving technology, its success relies not only on the promise of technological innovation, but the importance of cross-sector cooperation. Key stakeholders needed at the table include universities, tech firms, governments and insurers.

This podcast episode spotlights Dr Kadri's pioneering research on the use of acoustic gravity waves for tsunami prediction, emphasising the transformative potential of this approach. It also provides insight into Dr Kadri's motivations in dedicating his studies to this unique line of research. Fundamentally, he sees the opportunity to make the greatest impact of all: realising the potential to save lives.

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