

# Submarine Mass Movements and Their Consequences

Advances in Natural and Technological Hazards Research

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Editors

# Submarine Mass Movements and Their Consequences

4th International Symposium

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## Dedication

*William R. Normark*  
1943–2008

*Bruno Savoye*  
1959–2008

This book, “Submarine Mass Movements and Their Consequences IV”, is dedicated to the memory of two colleagues whose wide-ranging field studies did so much to advance our understanding of deep-water sedimentation systems: Drs. Bill Normark and Bruno Savoye. I had the good fortune to count them among my closest professional and personal friends. Both were sea-going scientists *par excellence*, both were warm and supportive individuals, who always had time for students, and both were modest about their own accomplishments.

Although many will remember Bill for his work on turbidites and submarine fans, he made important early contributions to our understanding of submarine mass movements. Large slides are a significant component of deep-water terrigenous basins and thus did not escape Bill’s curiosity. In 1968, during his Ph.D. work, he acquired seabed imagery and sub-bottom profiles with the Scripps deep-tow system over Ranger slide off Baja California. His 1974 and 1990 papers on this slide are classic Normark: meticulous use of multiple data sets and a clear mind as to what were the important issues. As Chief Scientist of the GLORIA cruise that mapped the seafloor around the Hawaiian islands, he was the first to appreciate the full extent of the flank-collapse debris avalanches, using the terms “prodigious” and “humongous” in the literature (and “giant” when reined in by editors).

Likewise, Bruno is remembered by many for his work on turbidite systems, but he too worked on submarine slides, particularly earlier in his career. The first paper that he and I worked on together described a slide near the wreck of the *Titanic*, where his colleagues at IFREMER had collected a magnificent survey with the next generation of deep-tow technology, the IFREMER SAR, but just missed the wreck. He is well known for his contributions on the 1979 Nice landslide, which triggered both a tsunami and a turbidity current. Bruno brought his enthusiasm and energy, together with his organisational and analytical skills as an engineer, to the science of turbidites and mass movements. He combined the technological expertise of IFREMER, industry funding and his own instinct of what was necessary to make significant scientific advances at sea.

Mass movements are an important part of the turbidite story. For Bill and Bruno, during much of their careers, mass movements were regarded as the predominant cause of turbidity currents. Both played an important role in challenging that dogma in recent years. Those who study mass movements from the comfort of the seismic work-station or by numerical modelling owe a lot to seagoing scientists like Bruno and Bill who laid the groundwork of where, why and how submarine mass-movements occur in the field.

David J.W. Piper  
Halifax, June 2009

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