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Volcanic debris avalanches - from collapse to hazards

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This year marks the 40th anniversary of the 1980 Mt. St. Helens eruption and sector collapse. In acknowledgement to the vast research dedicated to understanding volcano collapse and debris avalanche dynamics, we have collated in a book the topic's current state of the art. Within 12 chapters, this book contains reviews of and new insights from the work done over the past four decades, and provides outlooks and recommendations for future research. It is part of the Springer Book Series 'Advances in Volcanology' and the chapters contributed by a team of experts cover the following topics:

- Introduction
- A historical perspective on lateral collapse and debris avalanches
- Terminology and strategy to describe volcanic landslides and debris avalanches
- Distribution and geometric parameters of volcanic debris avalanche deposits
- Destabilizing factors that promote volcano flank collapse
- Volcanic debris avalanche transport kinematics and emplacement mechanisms
- Sedimentology of volcanic debris avalanche deposits
- Climatic and paleo-climatic implications
- Computer simulation of volcanic debris avalanches
- Volcanic debris avalanche deposits in the context of volcaniclastic ringplain successions
- Cyclicity in edifice destruction and regrowth
- Volcanic island lateral collapses and submarine volcanic debris avalanche deposits

Finally, the aim of the book is to reach the professional research community as well as students and a broader audience interested in hazard management in volcanic environments.