Special Issue

Extreme Climate in Arid and Semi-arid Regions

Message from the Guest Editor

In climate change, arid and semi-arid climates are under more pressure than other regions due to their fragile ecosystems. Previous studies have indicated the enhanced warming in this region, with a higher frequency and severity of extreme weather and climate. As an example, drought is relatively common in semi-arid regions, but the increasing frequency and intensity of drought will collapse the original fragile ecological environment in arid and semi-arid regions. At the same time, increasing precipitation can also have negative impacts on arid and semi-arid regions. We must keep an eye open for the secondary geological hazards induced by strong rainfall events, because even small precipitation changes in semi-arid regions can trigger flash floods, landslides and debris flows. Other extreme climate events such as snowstorms as well as extreme low and high temperatures also need more attention.

Guest Editor

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Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

Editor-in-Chief

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