Regional Climate Modeling

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Why we need downscaling

General Circulate Models supply...

Impact models require ...

Regional models supply

Point
The Centre is collaborating with other institutions in the use of the PRECIS model (25 & 50 km resolutions) to look at future climate scenarios.

Collaborating Institutions include:
- Hadley Centre
- University of the West Indies (Barbados and Jamaica)
- INSMET in Cuba
- CATHALAC in Panama
<table>
<thead>
<tr>
<th>No.</th>
<th>Driving conditions</th>
<th>Domain</th>
<th>Resolution</th>
<th>Period</th>
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</thead>
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<tr>
<td>1</td>
<td>ERA15</td>
<td>Big Caribbean</td>
<td>50 km</td>
<td>1979-1983</td>
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<td>2</td>
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<td>Big Caribbean</td>
<td>50 km</td>
<td>1979-1993</td>
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<td>HadAM3 H</td>
<td>Big Caribbean</td>
<td>50 km</td>
<td>1961-1990</td>
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<td>4</td>
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<td>50 km</td>
<td>2071-2100</td>
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<td>50 km</td>
<td>2071-2100</td>
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<td>50 km</td>
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<td>25 km</td>
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<td>25 km</td>
<td>1961-2100</td>
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</table>

Experiments completed
Mean changes in the annual surface temperature for 2071-2099 period

- ECHAM 4 – A2
- HADCM3 – A2
- ECHAM 4 – B2
- HADCM3 – B2
Change in Temperature at 1.5 meters (Celsius)

Period: 2050–2055  Annual Mean
Model: PRECIS–Echam  GHG Scenario: SRESA2
Central Farm Scenario

Temperature Projections (Cent Farm)
Change in Temperature at 1.5 meters (Celsius)

Period: 2050–2055  Annual Mean

Model: PRECIS-Echam  GHG Scenario: SRESA2
CARIWIG

• Weather Generator
• Collaboration
  – Caribbean modeling community
  – Newcastle University
• Provides access to
  – Historical data
  – Future climate
  – Simulated data tools
• Map based interfaces for data location, visualization and selection
• Graphing and imaging tools
• Data downloads
  – Raw data, images, GIS files
  – Current views from portal
  – Graphs and charts
GoLoCarSec Project

- Global-Local Caribbean Climate Change Adaptation and Mitigation Scenarios Project
- Objective: Develop consistent regional scenarios/storylines for AR5 RCPs for impact studies
- Downscaling RCP 4.5 and RCP 8.5 to 10 km for 4 GCMs for selected Caribbean islands
- Will be expanded to Central and South America
- Collaboration: UWI, CCCCC, SEI
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