

Weather Radar



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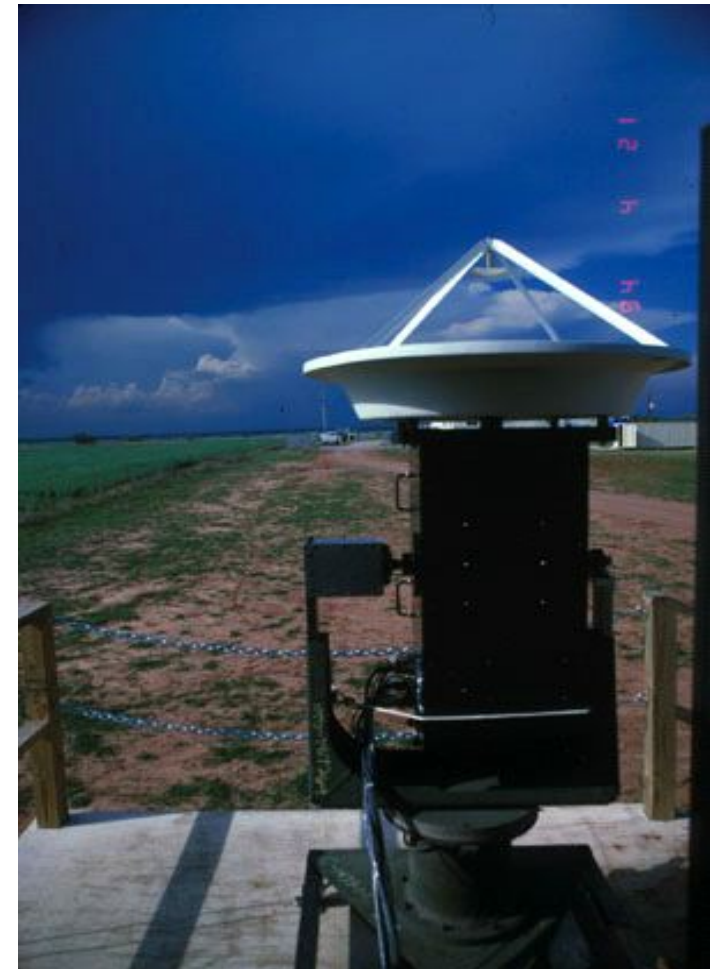
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<http://atschool.eduweb.rmpkc.co.uk/radgeog>

What is radar?

Radar = radio detection and ranging

- **Electro-magnetic waves are sent out.**
- **Signals (echoes) bounce back from targets** eg rain droplets.
- **This can show the distance, size and velocity of the targets.**
- **Weather radar detects echoes from water droplets in rain clouds.**
- **Computer software processes and maps the data.**

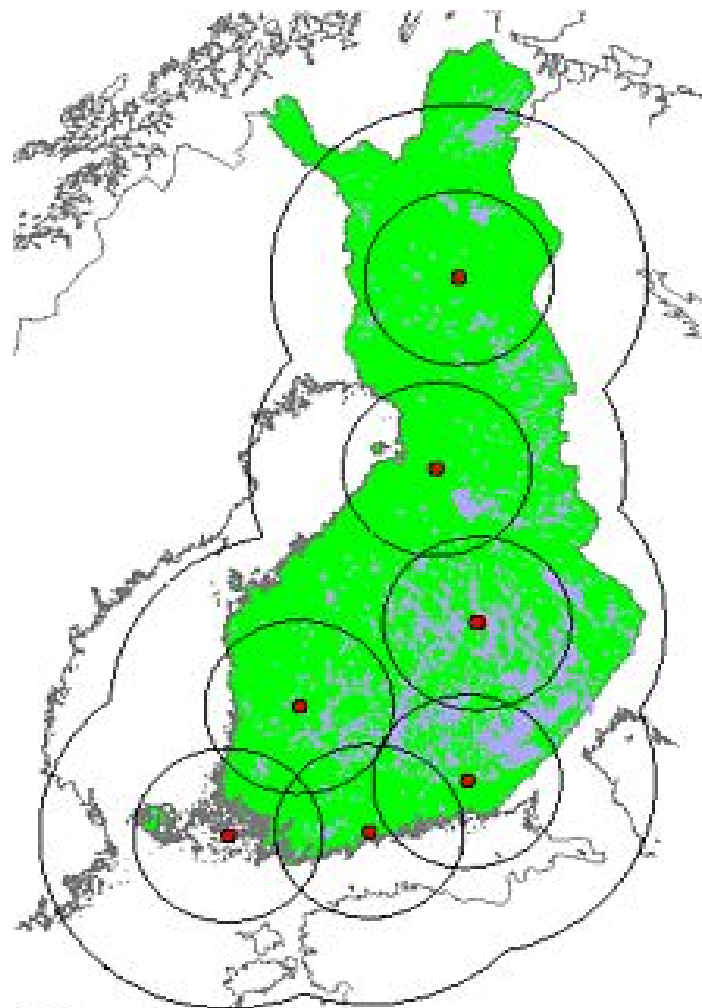


National radar networks

Many countries have set up weather radar networks to help weather forecasting and rainfall prediction.

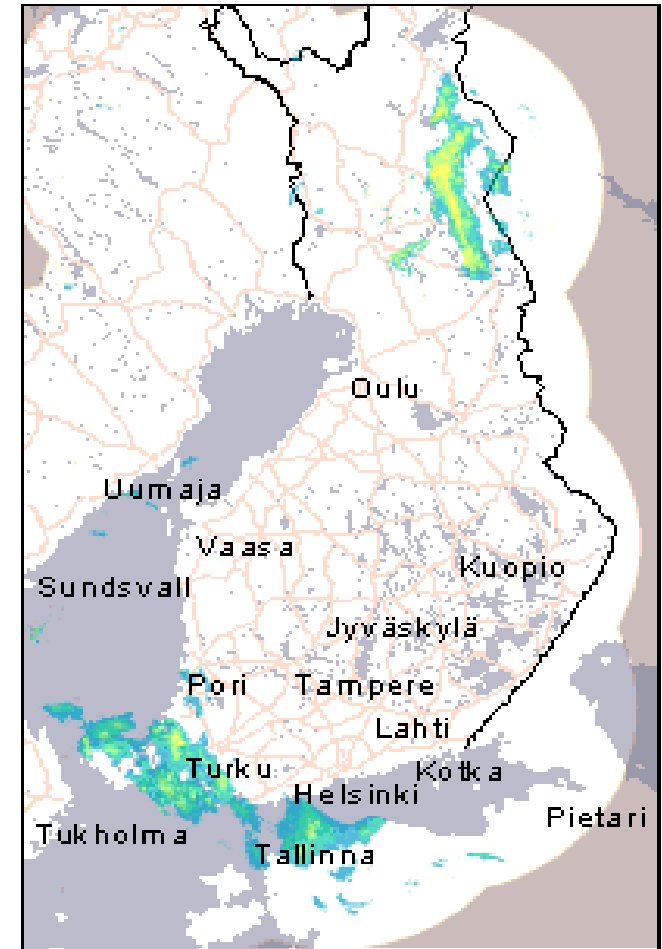
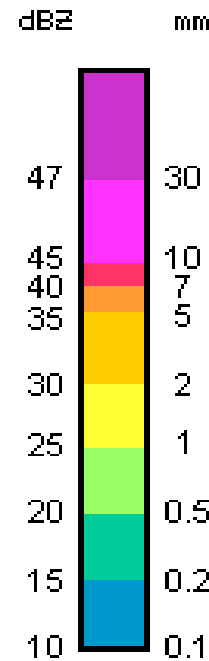


Radar maps



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Rainrate 23.12.2000



Can you identify the country?

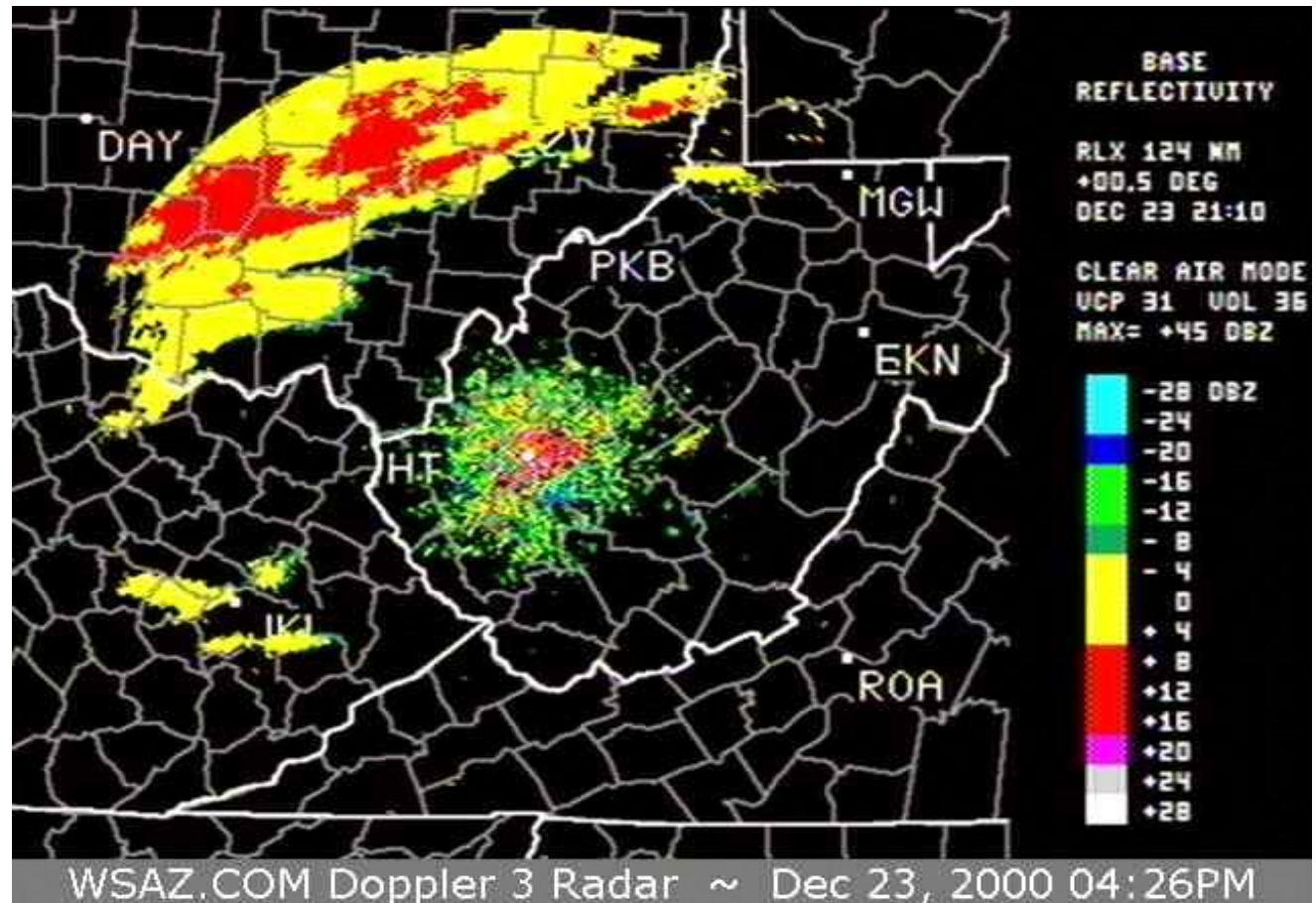
What do radar maps show?

Larger droplets have higher radar reflectivity values (**dBZ**).

These **dBZ values** can be mapped with different colours.

Data can also be mapped as **rainfall rates - mm per hour**.

Several images can be looped to make radar movies.



Radar Reflectivity (dBZ)

0-30 dBZ

30-45 dBZ

45-55 dBZ

+55 dBZ

Type of precipitation

Light rain

Moderate rain

Convective storm

Severe storm

Rainfall rate

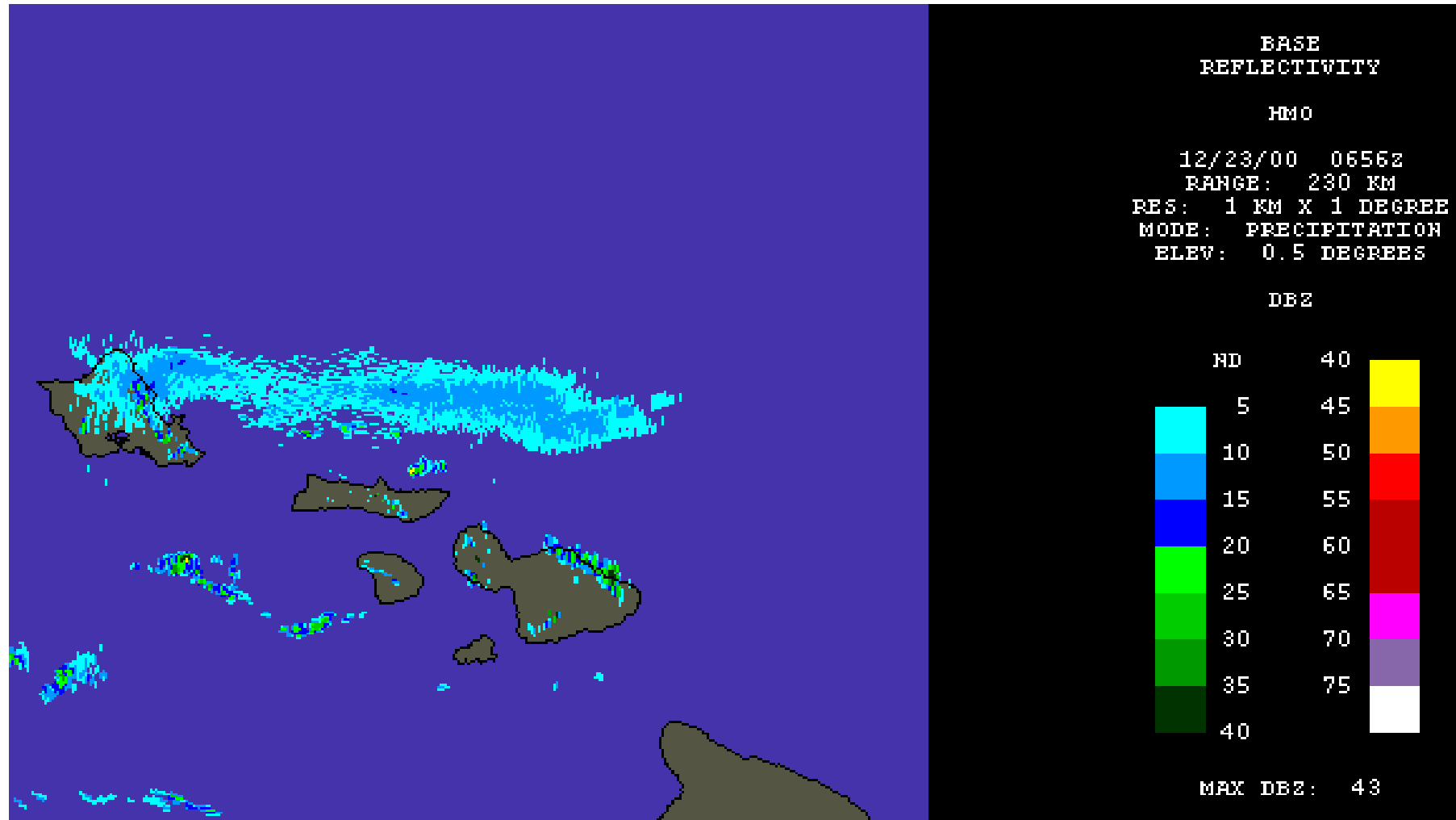
up to 3 mm/hr

3-25 mm/hr

25-100 mm/hr

+100 mm/hr

Hawaii radar



Where is the rain mainly falling?

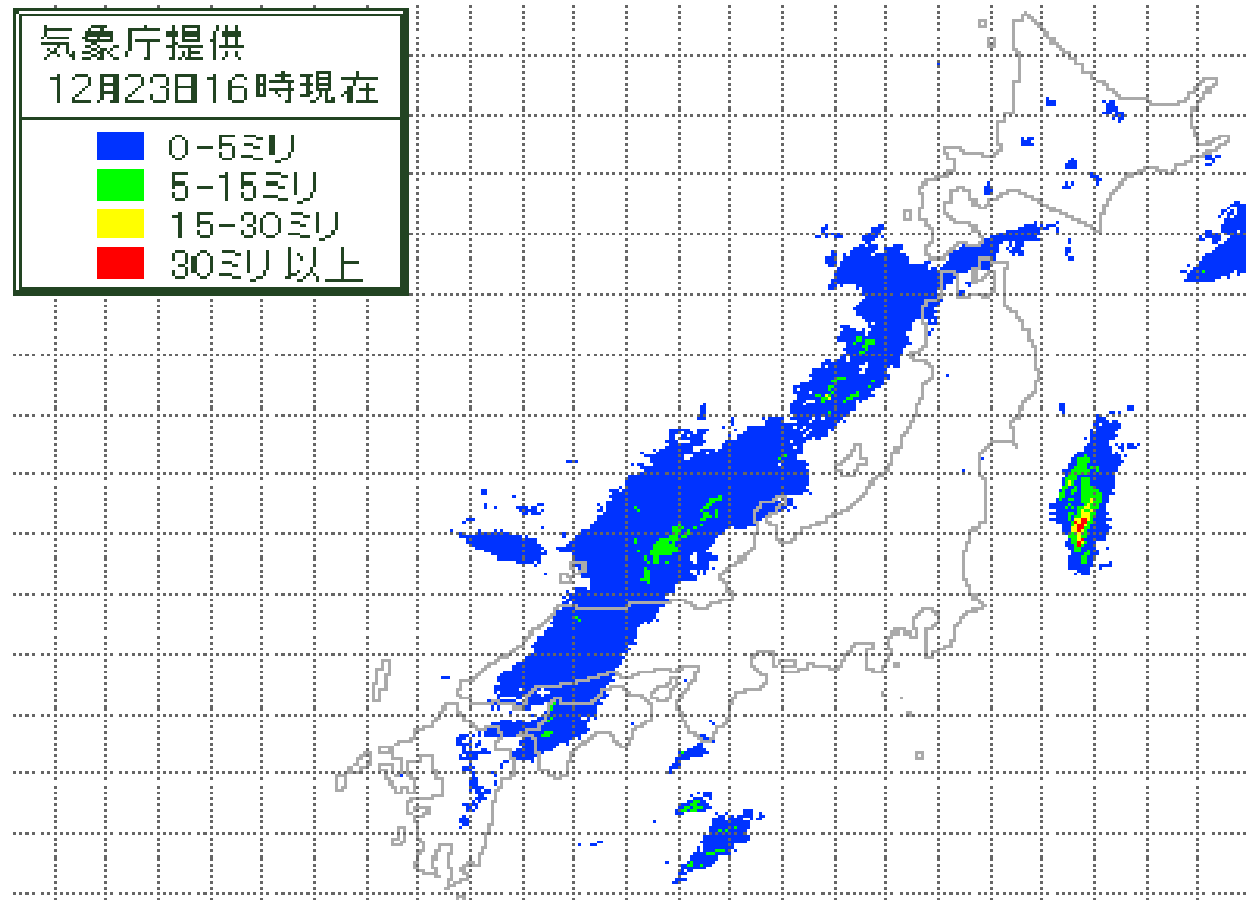
How much rain is falling (mm per hour)?

Japan radar - forecast

A band of rain can be seen to the west of Japan.

Question:

Assuming a westerly wind what is your forecast for Japan over the next few hours?



Answer: wet and windy!