



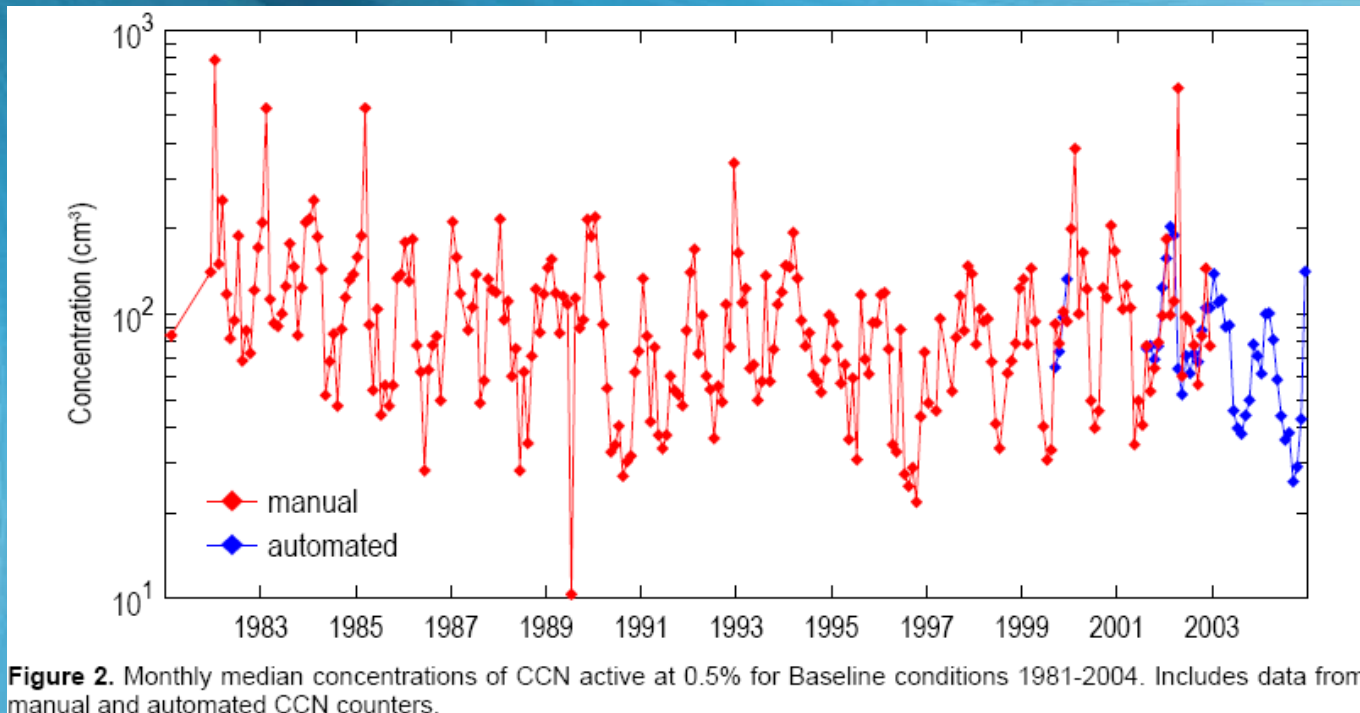
From Science to Operations:

Practical problems in implementing instruments in an operational network

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The Ideal:



-A very long time series with known error characteristics of some variable.

The CCN record at Cape Grim (Courtesy of John Gras, CSIRO)

•••• Problems [no solutions!]:

- The babysitting issue
- The four-year wall
- The manager's dilemma
- The politician's horizon

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Babysitting your instrument:



-Keeping a small family:

The one-scientist – one instrument principle

-Getting to know your 'baby':

Understanding how the instrument works

-'Moving out of the house':

Exposure to operations; 'operations guys talk funny'; 'scientists are weirdo's'. The SLA.

-Your 'child' is always your 'child':

The link between scientist and instrument

cannot be erased

.... **The four-year wall:**

- Getting to know an instrument takes lots of time
- You cannot 'score' on a developing instrument, so avoid to become a prisoner of the project. Obscurity does not pay the bills.
- Funding comes in four – year cycles, EU – projects, also in government departments!
- Is it really fun to work on a problem for 10 years?

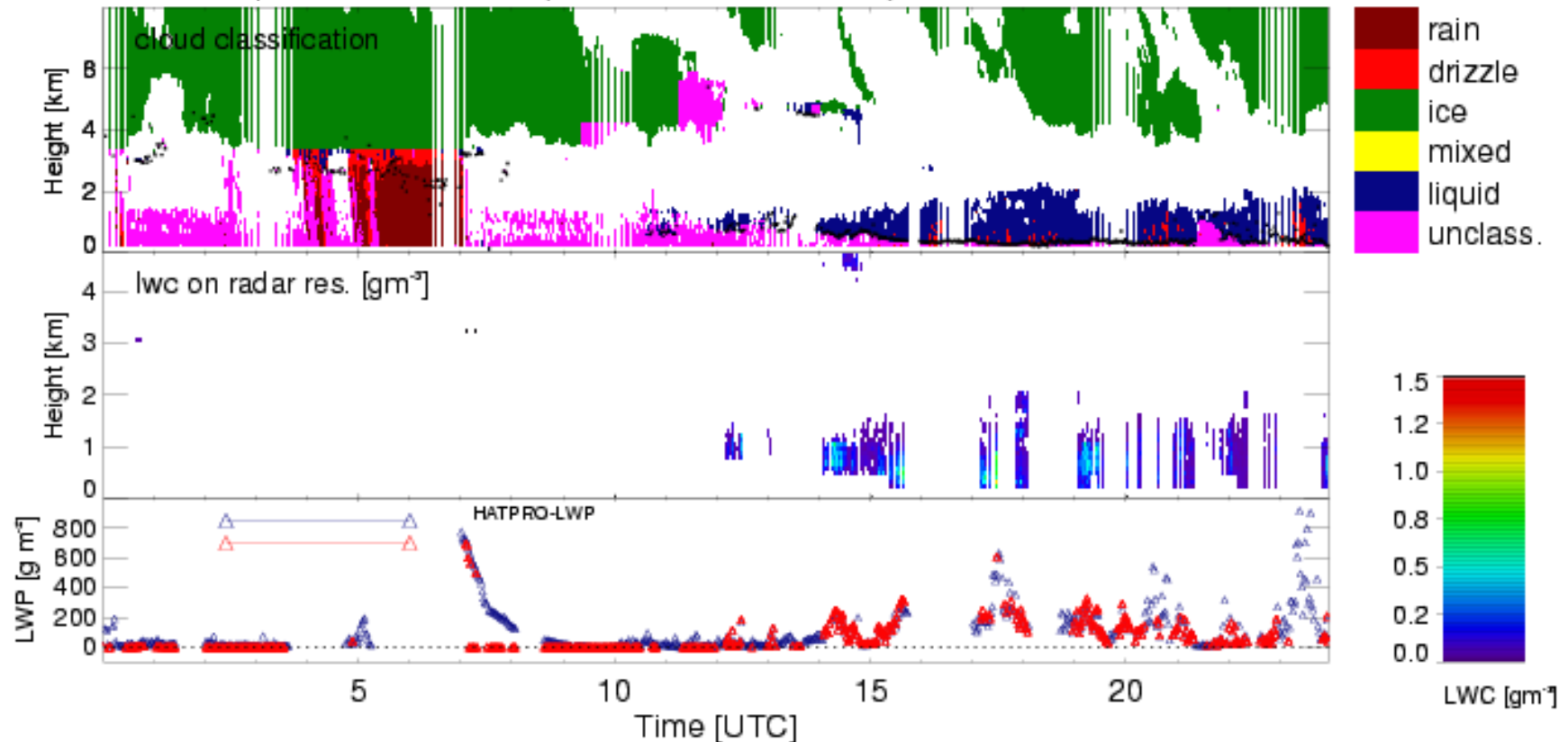
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Example at Cabauw [almost operationa]



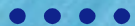
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Liquid clouds - IPT(KNMICR/HATPRO), Cabauw, 060925



Cloud classification

Was supported under EU FP5; continues on a shoestring budget



The manager's dilemma:



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-There is science and science

Three types of work:

- a) theoretical
- b) with data and theory
- c) with instruments

-Scoring with Citation Indices: Type C has the fewest publications and the lowest Citation Indices [by a considerable margin].

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So it is 'low impact' work; you can't score it easily; blessed be the manager who understands this dilemma

•••• The politician's horizon:

- Who wants to invest in a 30 year project?
I need to be reelected in 3 years
- Everybody wants 'my' money [read the taxpayers money]. I cannot sell this to my electorate.
- The climate problem is solved [thanks to Gore]: We need to move to Adaptation and Mitigation Issues, not more of the same, i.e. Monitoring

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An example of rarity and beauty:

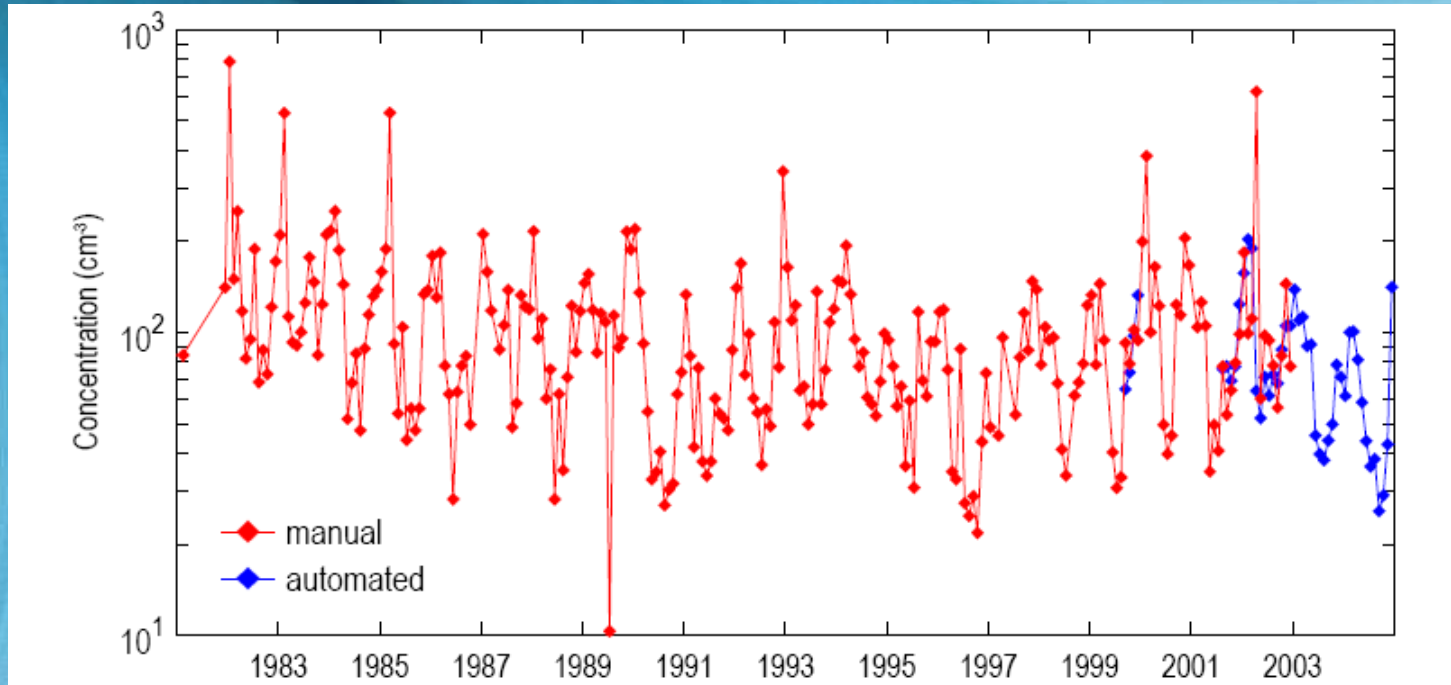


Figure 2. Monthly median concentrations of CCN active at 0.5% for Baseline conditions 1981-2004. Includes data from manual and automated CCN counters.

- Stable staff: One scientist worked on a single record for 25 years
- Stable funding: Provision for 30 years
- Stable instruments: Few variations