ATLAS SUSY "product" meeting

In the forthcoming months we experimentalists will be working hard on detector understanding, calibration and comparison. When we have some confidence in our analyses we will wish to present them, but there is a very large number or ways in which our results could be presented. The primary purpose of this particular meeting is to determine what end product you – a cross-section of our analysis "customers" – desire or expect from the analyses which we are doing.

There are three related questions we would like you to consider:

(A) Which (SUSY-search-focused) differential distributions would you like to see from ATLAS in the next year or so?
- Distributions for searches? (ptmiss? sumet? m_{T2}? M_{eff}, M_{CT}, m_{jj}, m_{ll} ? Something different? Double differential distributions? …)
- Will you want other distributions for constraining models if an excess is observed (and if so do you already know which)?

(B) What value do you place on experiment-derived limits on individual production+decay processes?
- As an example would you like a limit on the cross-section * BR for producing e.g. squark and gluino as a function of their masses, followed by decays to LSP and jets?

(C) What value do you place on experiment-derived limits on constraints on particular high-scale models (e.g. mSUGRA, mAMSB etc)

We would be grateful if you could give these questions some thought. We have deliberately asked people with a variety of different backgrounds & perspectives to contribute, so we expect a variety of perspectives.

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As an example of what has gone before, it might be helpful to consider e.g. the D0 paper below:
http://arxiv.org/PS_cache/arxiv/pdf/0712/0712.3805v2.pdf

Does this D0 paper represent the sort of thing you are looking for…?
- several analyses each targeted at a different decay topology
- constraints presented in mass space (m_{gluino}, m_{squark})
- interpretation in mSUGRA space (m_0, $m_{1/2}$)
Obviously there would need to be more complicated generalisations of the above for more complicated decay topologies… these probably need some more thought.