Gudrun’s (NLO) List

- **2->3**
  - pp->WW jet
  - pp->VVV
  - pp->H + 2 jets

- **2->4**
  - pp->4 jets
  - pp->tT + 2jets
  - p->tT bB
  - pp->V+ 3 jets
  - pp->VV + 2 jets
  - pp->VVV + jet
  - pp->WW bB

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**From technology point-of-view**

- start with massless cases such as
  - γγ + 2 jets
- then add progressively more difficult calculations (additional scales and/or subprocesses)
  - W + 3 jets
  - pp->4 jets
  - WW + 2 jets
  - tT + 2 jets
  - tT bB
  - WWbB

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**can be given to good student (at least one of Thomas’ students)**
Experimental priority list

- Gudrun’s list
  - 2->3
    - pp->WW + jet
    - pp->VVV
    - pp->H + 2 jets
  - 2->4
    - pp->4 jets
    - pp->tT + 2jets
    - p->tT bB
    - pp->V+ 3 jets
    - pp->VV + 2 jets
    - pp->VVV + jet
    - pp->WW bB

- 1. pp->WW jet
- 2. pp->H + 2 jets
  - 1. Background to VBF Higgs production
- 3. pp->tT bB
  - 1. background to tTH
- 4. pp->tT + 2 jets
  - 1. background to tTH
- 5. pp->WWbB
- 6. pp->V V + 2 jets
  - 1. background to WW->H->WW
- 7. pp->V + 3 jets
  - 1. general background to new physics
- 8. pp->V V V
  - 1. background to SUSY trilepton
Experimental priority list

Note have to specify how inclusive final state is
- what cuts will be made?
- how important is b mass for the observables?

How uncertain is the final state?
- what does scale uncertainty look like at tree level?
- new processes coming in at NLO?

Some information may be available from current processes
- pp->tT j may tell us something about pp->tTbB?
  ▲ j=g->bB
- CKKW may tell us something about higher multiplicity final states

1. pp->WW jet
2. pp->H + 2 jets
   1. background to VBF production of Higgs
3. pp->tT bB
   1. background to tTH
4. pp->tT + 2 jets
   1. background to tTH
5. pp->WWbB
6. pp->VV V + 2 jets
   1. background to WW->H->WW
7. pp->VV V + 3 jets
   1. general background to new physics
8. pp->VV V V
   1. background to SUSY trilepton