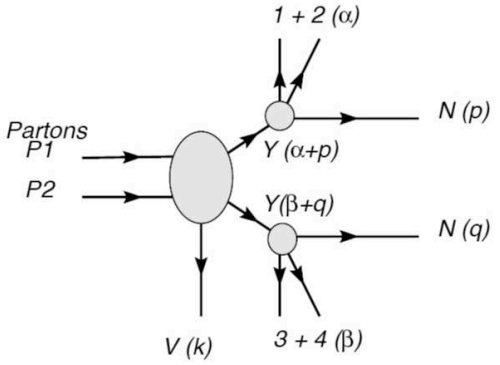
Graham Ross

Rudolf Peierls Centre for Theoretical Physics,
University of Oxford

- LHC mass and spin determination $\not{p}_T$, $\not{m}$
- Testing SUSY
- Non-Abelian Discrete symmetries — family symmetry
  hybrid natural inflation
  quantum Hall system
- MFV v/s FSFV

- LHC mass and spin determination



$$M_{2C}^2 = \min_{p,q,P_o,P_z} (p+\alpha)^2$$ + constraints

$M_2 \le m_{2C}$, $M_2 \ge m'_{2C}$ (*with UTR*)

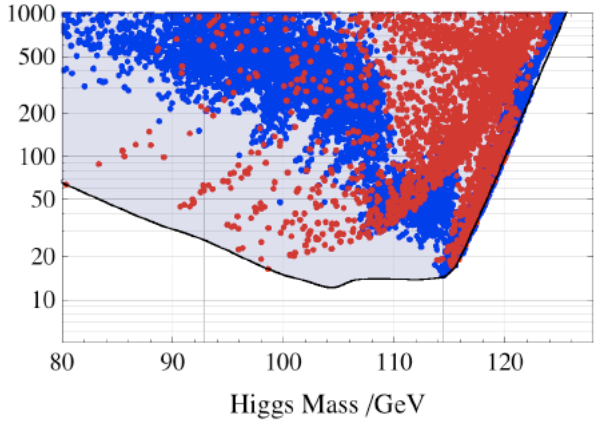
θ, ϕ *distributions* ....*constrained by initial parton pdfs*

+ Dean Horton

- Testing SUSY

CMSSM

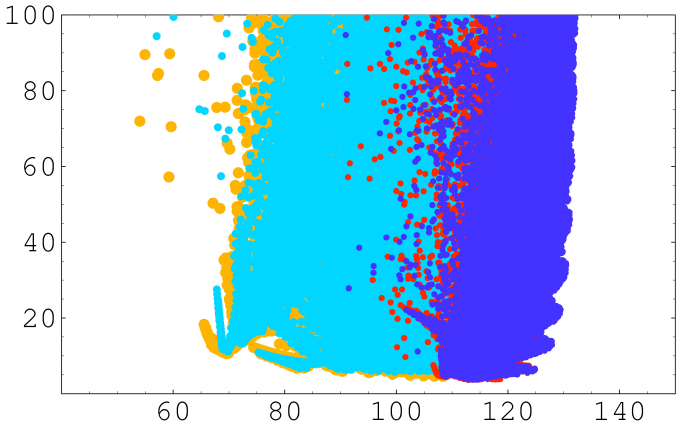
Δ_{2-loop}



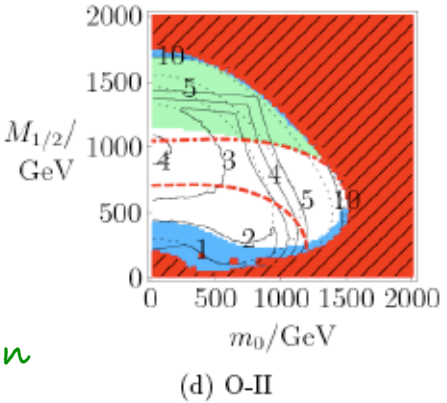
Beyond the MSSM

- Operator analysis

Dumitru Ghilencea, Sebastian Cassel



Nonuniversal gaugino masses

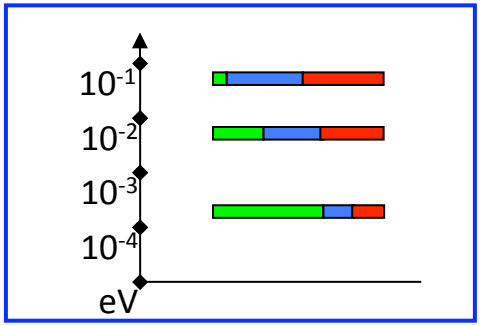


Dean Horton

(d) O-II

Non-Abelian Discrete symmetries

- family symmetry $\Delta(27) \equiv Z_3 \otimes Z_3^{'}$



Non-Abelian Discrete symmetries

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- hybrid natural inflation

$$D_4 : \qquad V(\phi) \simeq V_0 \left(1 - a \cos\left(\frac{\phi}{f} \right) \right)$$

+G. German

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+G. German

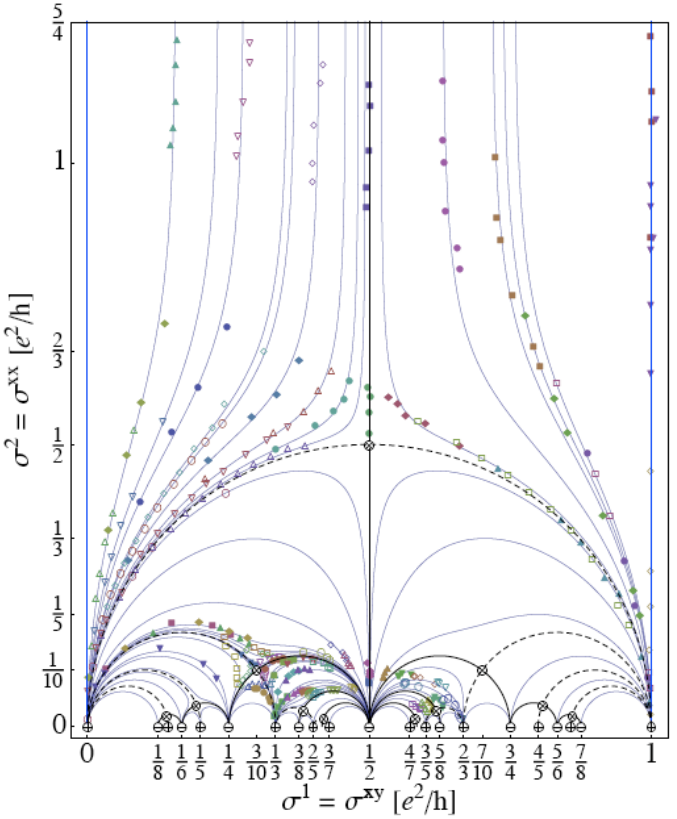
- quantum Hall system

$$\Gamma_0(2) \subset SL(2,Z)$$

$$\nu = 2.38 \pm 0.02$$

charge-flux duality

+A.Lutken



- MFV v/s FSFV (Family symmetry flavour violation)

$$L_{Yukawa} = Y^u_{ij}\ Q^i u^{c,j} H + Y^d_{ij}\ Q^i d^{c,j} \overline{H}$$

$$Y^u_{ij} \sim (\bar{3}_L, 3^u_R) \qquad Y^d_{ij} \sim (\bar{3}_L, 3^d_R)$$

$$Y^{u,d} = \begin{pmatrix} \phi_L^{\alpha_1} \\ \phi_L^{\alpha_2} \\ \phi_L^{\alpha_3} \end{pmatrix} \begin{pmatrix} \phi_R^{\beta_1^{u,d}} & \phi_R^{\beta_2^{u,d}} & \phi_R^{\beta_3^{u,d}} \end{pmatrix}$$

$$\begin{pmatrix} \phi_L^{\alpha_1} \\ \phi_L^{\alpha_2} \\ \phi_L^{\alpha_3} \end{pmatrix} \sim (\bar{3}_L, 1), \quad \begin{pmatrix} \phi_R^{\beta_1^{u,d}} & \phi_R^{\beta_2^{u,d}} & \phi_R^{\beta_3^{u,d}} \end{pmatrix} \sim \left(1, 3^{u,d}_R\right)$$

Zygmunt Lalak, Stephan Pokorski