

~~Elliptic~~ Anisotropic flow

The **anisotropy** in particle production is not entirely described by v_2 !
👉 higher **harmonics** $v_4, (v_6 \dots)^*$.

No obvious reason (symmetry considerations...) why these **harmonics** should reflect different aspects (initial geometry, time scales...) of the collisions \Rightarrow should be studied **together with** v_2 .

Kolb, Sollfrank & Heinz; Huovinen; Borghini & Ollitrault; Ko, Chen & Zhang

• Theorists:

- v_2 predictions should be accompanied by v_4 predictions;
- do not omit the STAR v_4 when fitting your favorite model(s) to “**anisotropic flow** data”.
- Experimentalists: please provide us with further data (easy request...) (what has become of PHENIX preliminary results, nucl-ex/0506019?)

* The physics behind v_1 might be different...

Experimentalists are from Mars, theorists are from Venus

(J.Nagle & T.Ullrich, Cargèse 2001)

Theorists know the reaction plane, experimentalists do not measure it
⇒ mismatch between

- what theorists compute within a given model $\equiv v_n$ (“true” flow);
- what experimentalists extract from their data: **estimates** ($v_n\{\text{EP}\}$, $v_n\{2\}$, $v_n\{4\}$, $v_n\{\infty\}$...), obtained using various methods of analysis that have different sensitivities to “parasitic” effects; (“nonflow” correlations between particles, fluctuations of flow itself...).

👉 my wish: that theorists analyze the outcome of their models using the methods used by experimentalists.

Codes implementing various methods (cumulants, Lee–Yang zeroes...)
(soon) available at <http://www.physik.uni-bielefeld.de/~borghini/Software/>.