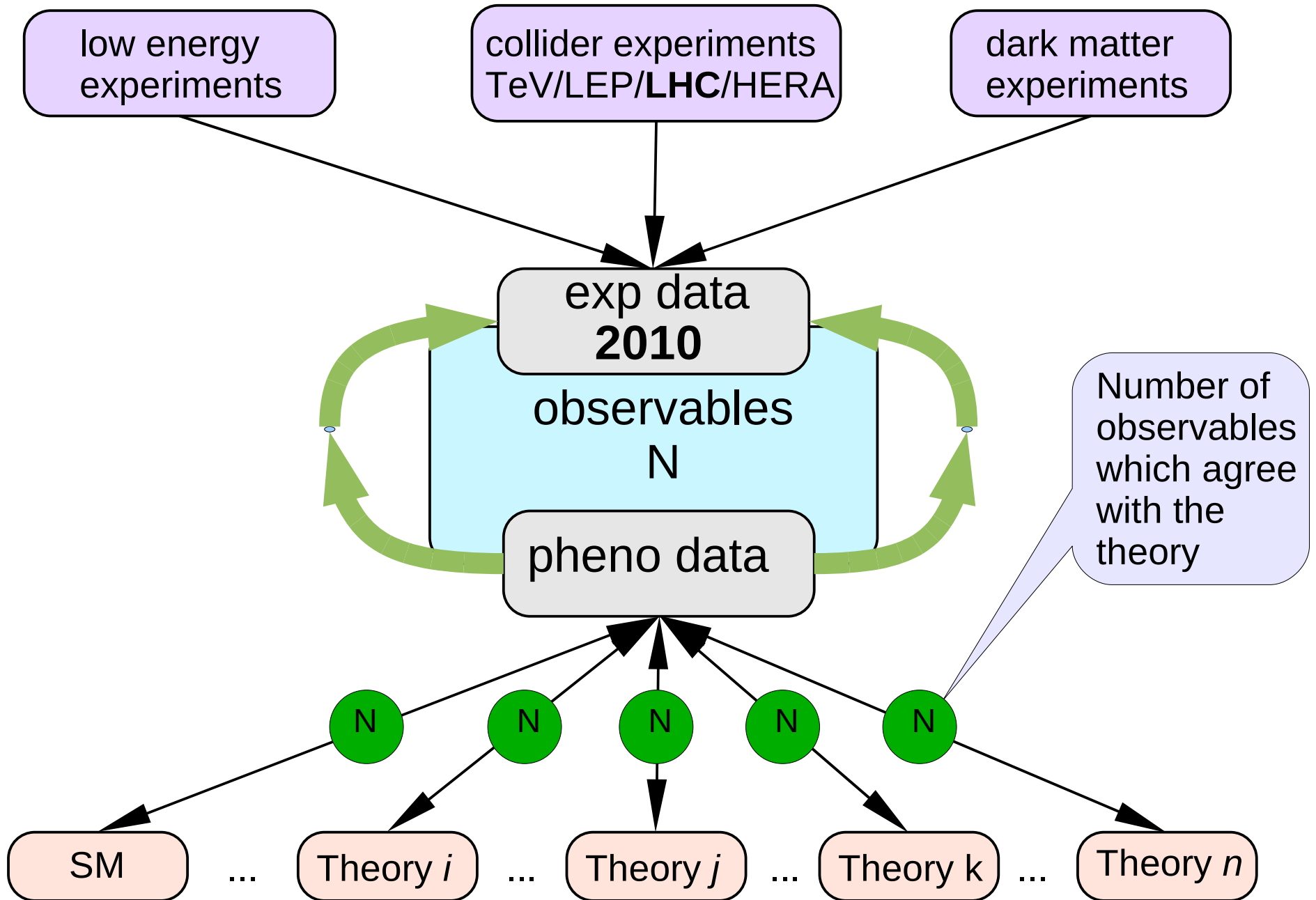
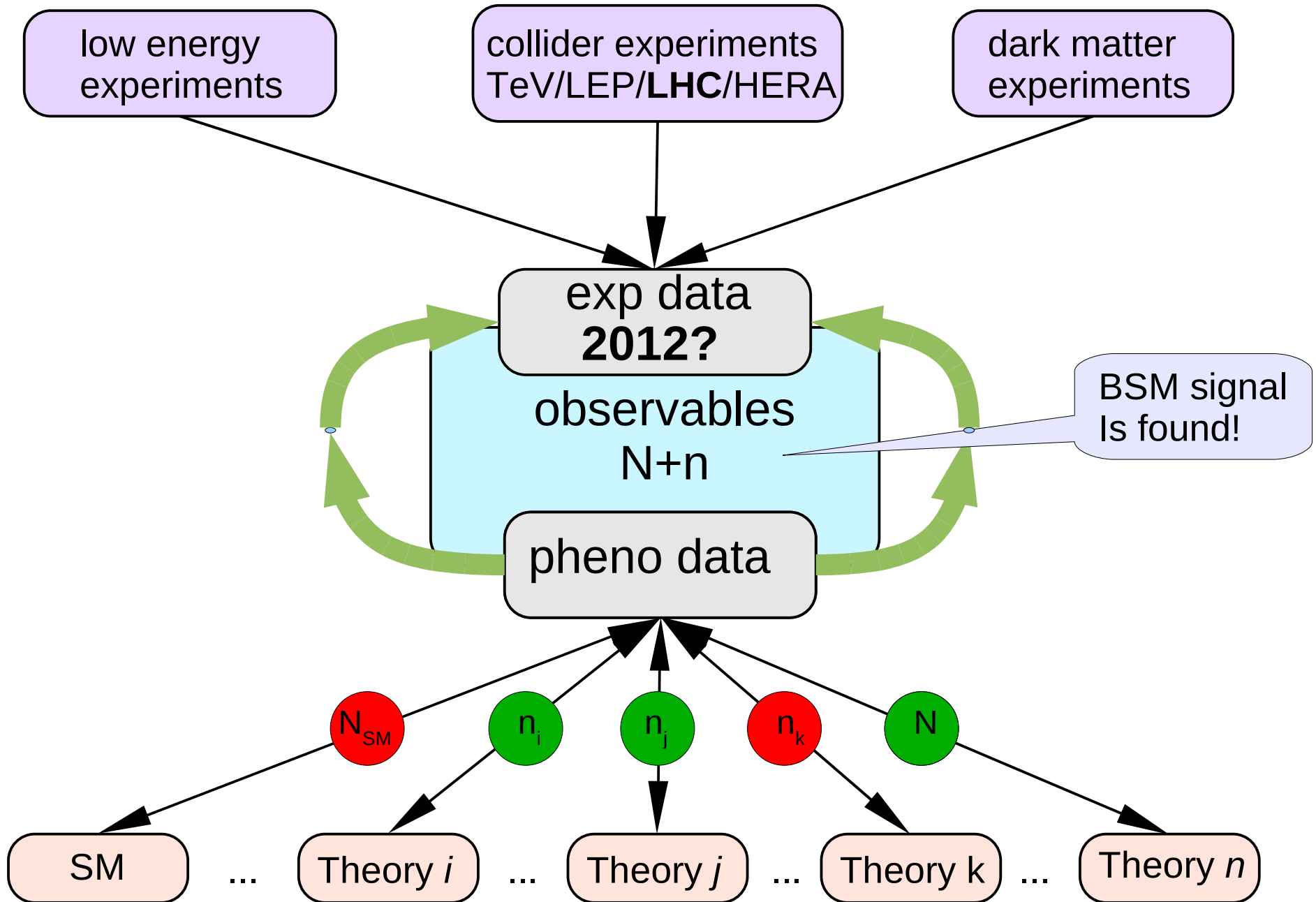


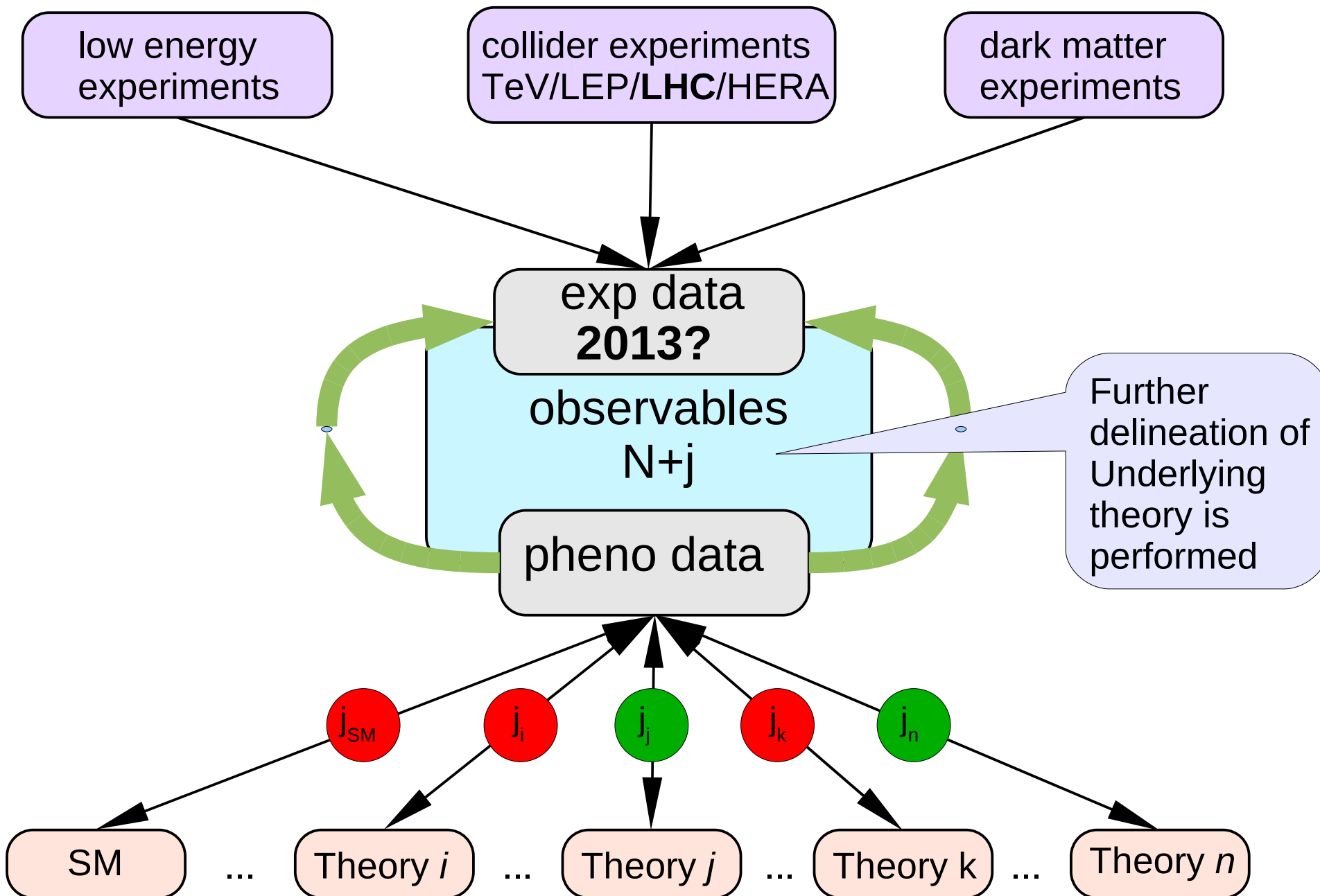
Possible scenario in the near future



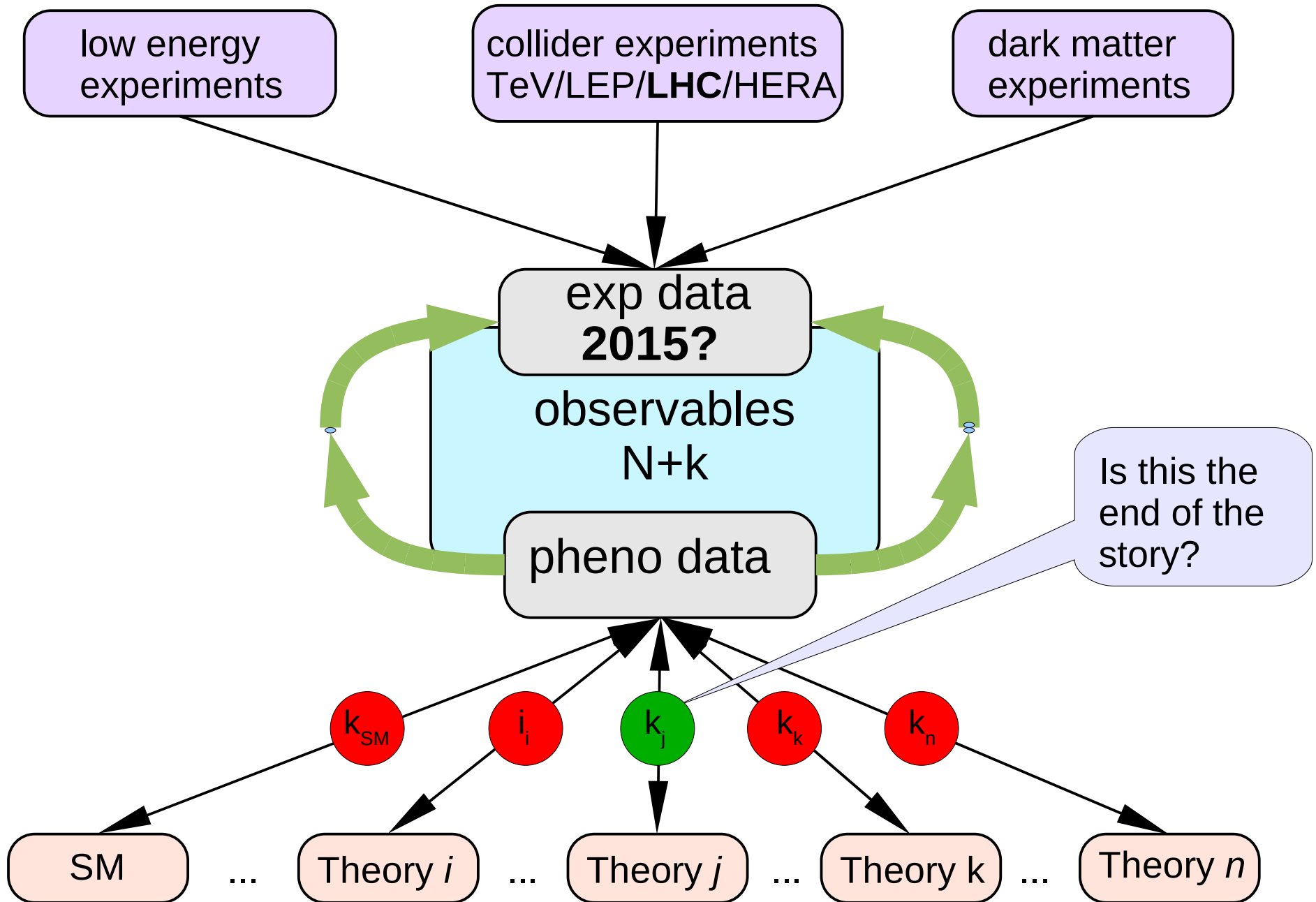
Possible scenario in the near future



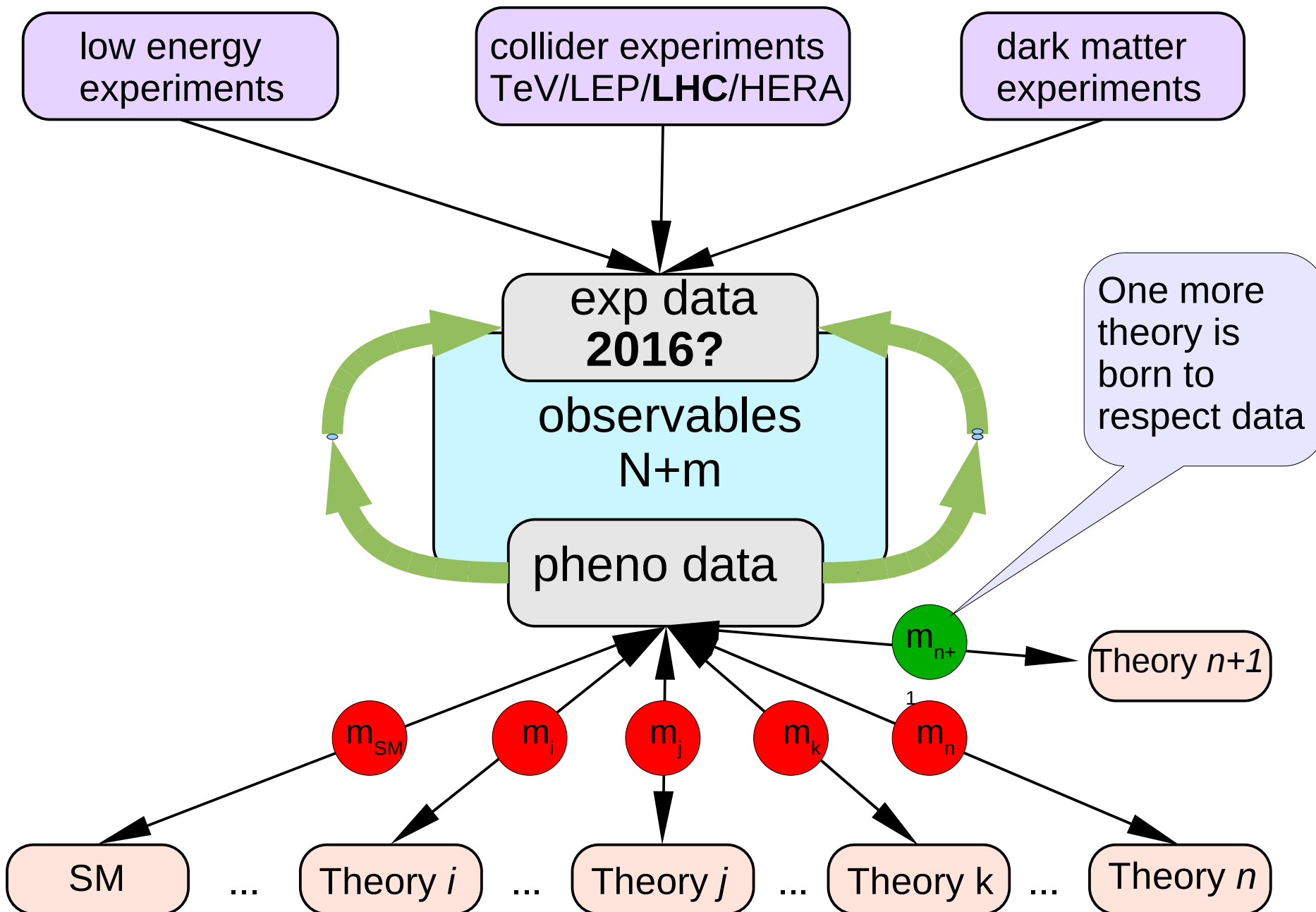
Possible scenario in the near future



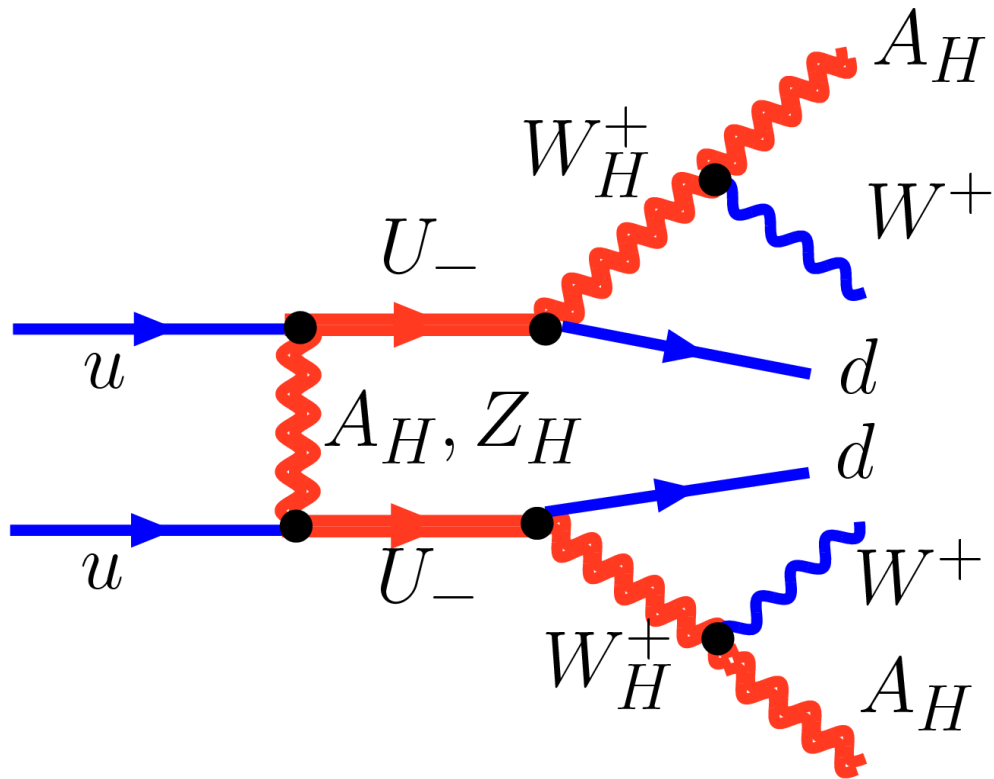
Possible scenario in the near future



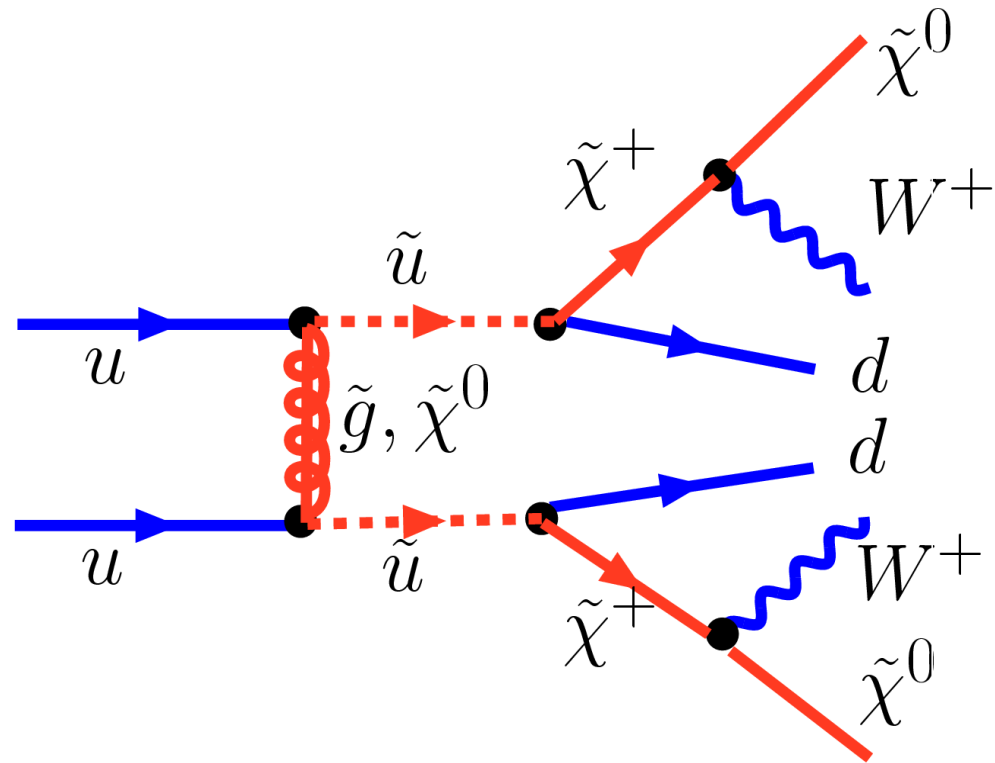
Possible scenario in the near future



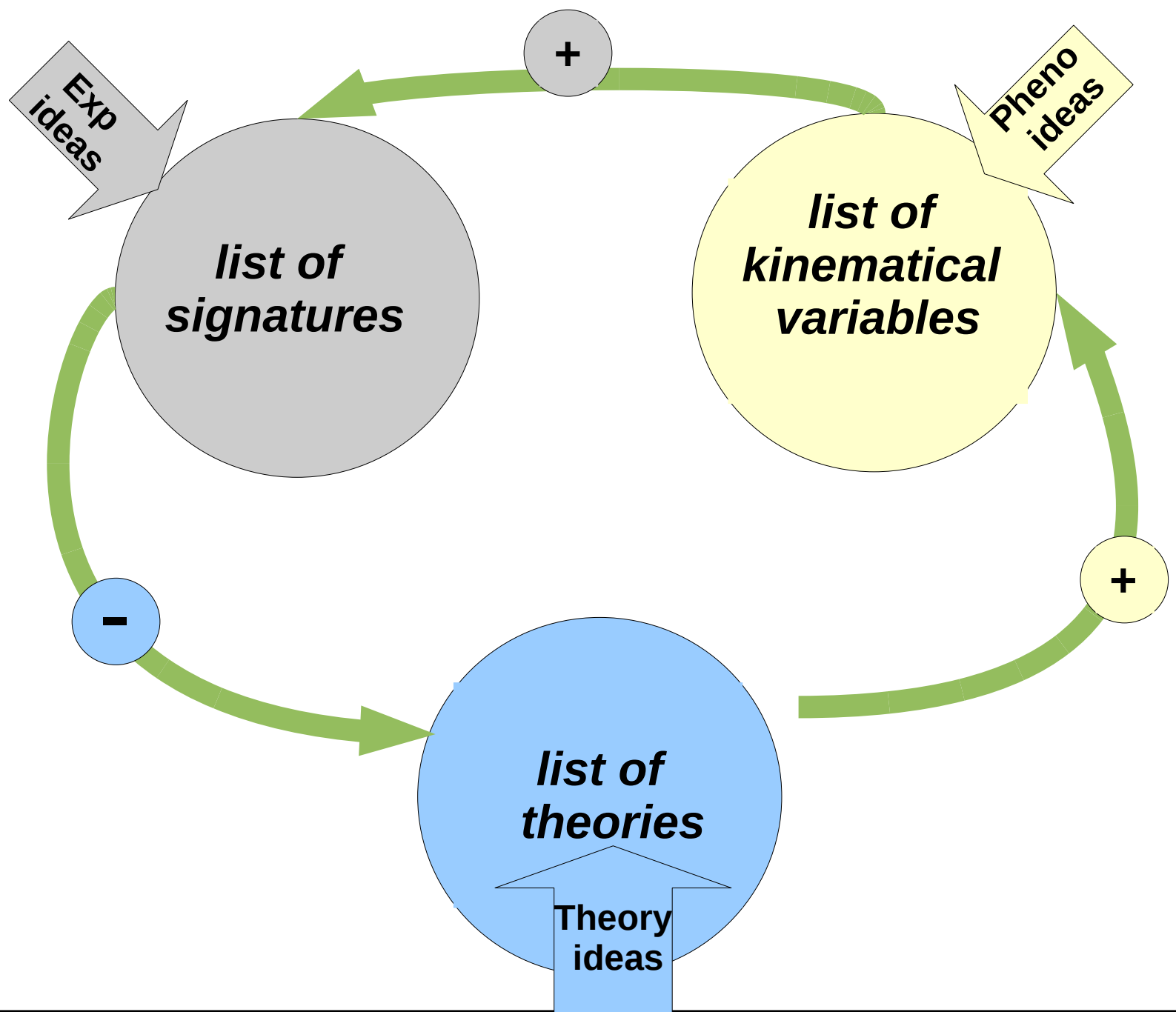
Signatures could look alike



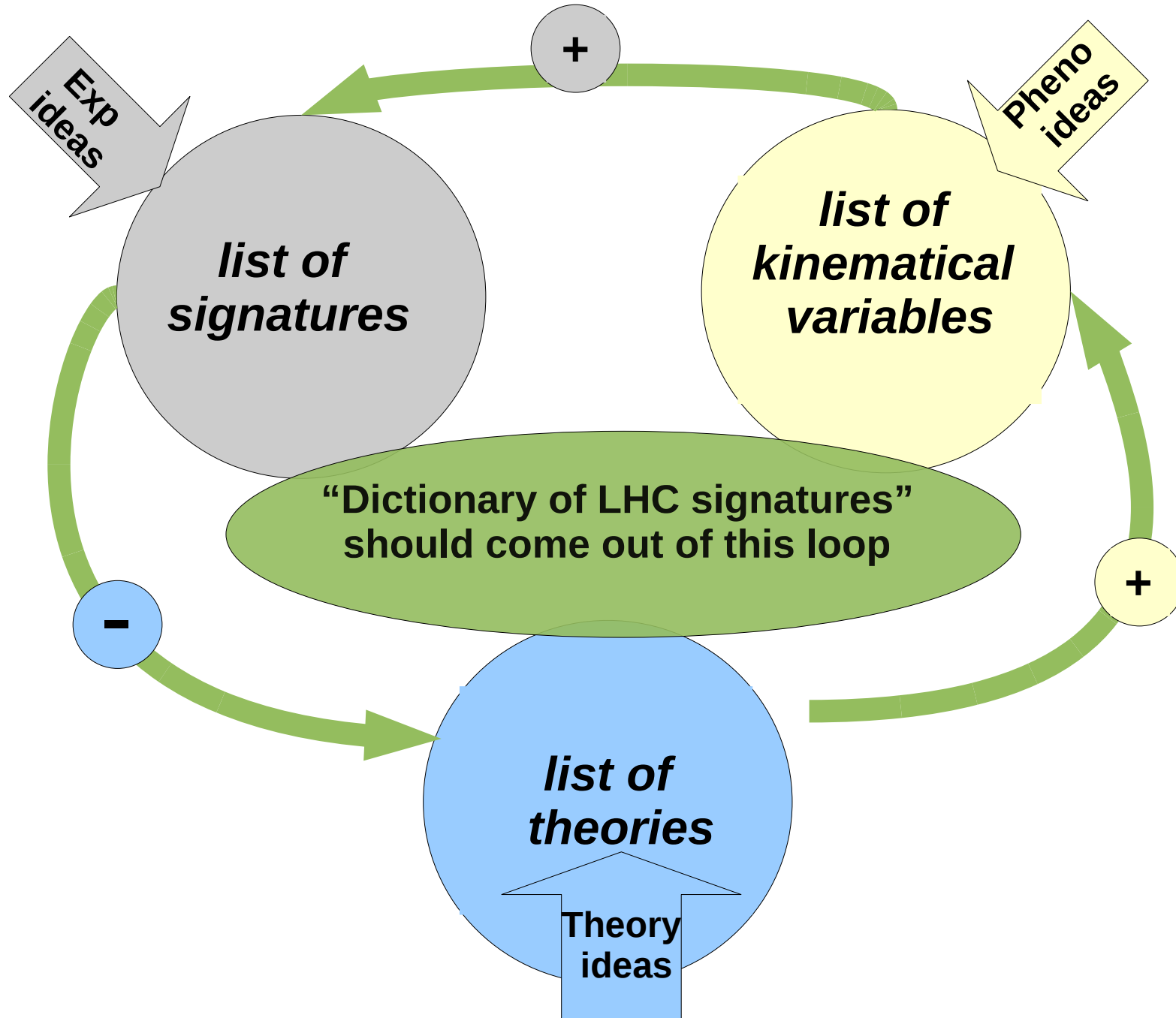
LHT



SUSY



The strategy for delineating of underlying theory



First Steps towards “Dictionary”

A.B., Aresh Datta, Albert De Roeck, Rohini Godbole, Bruce Mellado, Andreas Nyffeler, Chara Petridou, D.P. Roy, Pramana 72:229-238,2009. e-Print: arXiv:0806.2838 [hep-ph]

Variables		SUSY (MSSM)	LHT	UED
Spin		heavy partners differ in spin by 1/2	heavy partners have the same spin, no heavy gluon	heavy partners have the same spin
Higher level modes		NO heavy partners	NO heavy partners	YES heavy partners
N_{l+l+}/N_{l-l-}		$R_{SUSY} < R_{LHT}$	R_{LHT}	$R_{UED} \simeq R_{LHT}$
SS leptons rates		from several channels: SS heavy fermions, Majorana fermions	only from SS heavy fermions	only from SS heavy fermions
$R = \frac{N(\cancel{E}_T + jets)}{N(l's + \cancel{E}_T + jets)}$		R_{SUSY}	$R_{LHT} < R_{SUSY}$	R_{UED} to be studied
b-jet multiplicity		enhanced (FP)	not enhanced	not enhanced
Single heavy top		NO	YES	YES via KK2 decay
polarization effects	$tt + \cancel{E}_T$ $\tau\tau + \cancel{E}_T$	to be studied to be studied	to be studied to be studied	to be studied to be studied
Direct DM detection rate		high (FP) low (coann)	low (Bino-like LTP)	typically low for $\gamma_1(5D)$ DM [22] typically high for $\gamma_H(6D)$ DM [22]