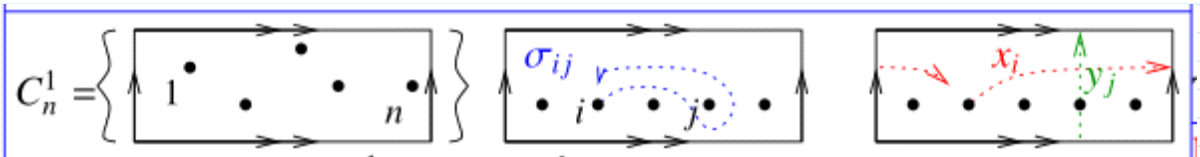
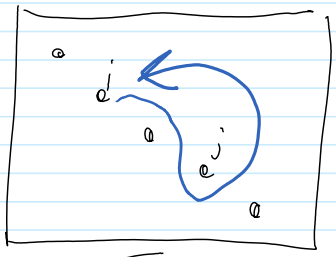
Elliptic Braid Relations

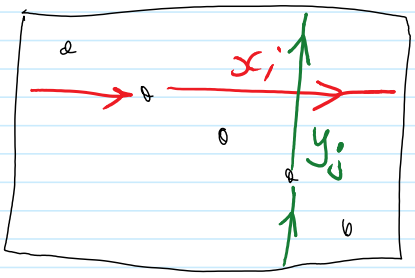
March-02-15 8:39 AM



Elliptic Braids. $PB_n^1 := \pi_1(C_n^1)$ is generated by σ_{ij}, x_i, y_j, with PB_n relations and ① $(x_i, x_j) = 1 = (y_i, y_j)$, ② $(x_i, y_j) = \sigma_{ij}^{-1}$, ③ $(x_i x_j, \sigma_{ij}) = 1 = (y_i y_j, \sigma_{ij})$, and ④ $\prod x_i$ and $\prod y_j$ are central. [Bez] implies $\mathcal{A}(PB_n^1) = \langle x_i, y_j \mid [x_i, x_j] = [y_i, y_j] = MORE \rangle$, and [CEE] construct a Taylor expansion using *sophisticated* iterated integrals. [En2] relates this to *Elliptic Associators*.



σ_{ij}



satisfy: ① $(x_i, x_j) = 1 = (y_i, y_j)$

② $(x_i, y_j) = \sigma_{ij}^{-1}$

③ $\prod_{i<k<j} x_k$ & $\prod_{i<k<j} y_k$ commute w/ σ_{ij}

(and therefore $(x_i x_j, \sigma_{ij}) = 1 = (y_i y_j, \sigma_{ij})$)

④ $\prod x_i$ & $\prod y_j$ are central.