

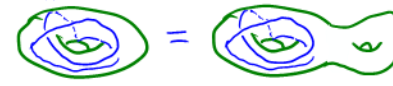
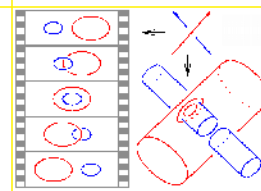
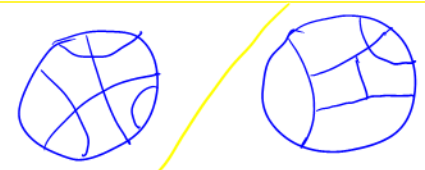
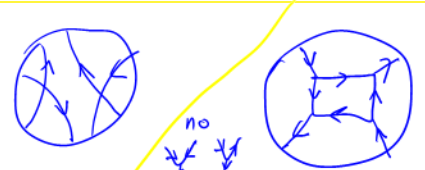

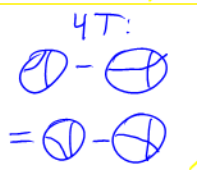
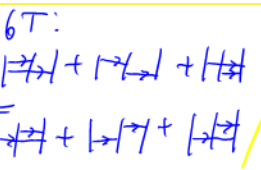
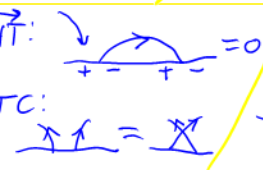
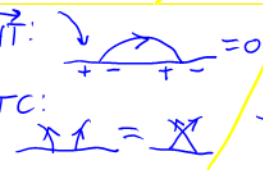



	u-knots	$\xrightarrow{1-1}$	v-knots	$\xrightarrow{\text{onto}}$	w-knots
Combinatorics	$\{\bigcirc\} / \begin{matrix} R1 \\ R2 \\ R3 \end{matrix}$ $= PA\langle X \rangle / R2, R3$ Planar Algebras have subfactor fame (ask/websearch Jones)		$\{\bigcirc\} = PA\langle X, X \rangle / \begin{matrix} R23, VK123, \\ \text{Mixed} \end{matrix}$ VR123: $\bigcirc = $, $\bigcirc = \bigcirc$, $\bigcirc = \bigcirc$ Mixed: $\bigcirc = \bigcirc$, not $\bigcirc = \bigcirc$ Better yet, or $\bigcirc = \bigcirc$ $= CA\langle X \rangle / R23$ "circuit algebra"		$\{v\text{-knots}\} / \text{overcrossings commute}$ so,  aka "wilded", "weakly virtual" ask Fenn, Kimanyi, Rouquier, Satoh
Topology	 Related to 3-manifolds, hyperbolic geometry, and God knows what else.		knots drawn on surfaces, modulo stabilization by adding/removing empty handles. 		 Related to "movies of flying rings" and to tubes in R^4
Finite Type	$V(\bigcirc) := V(\bigcirc) - V(\bigcirc)$		$V(\bigcirc) := V(\bigcirc) - V(\bigcirc)$ $V(\bigcirc) := V(\bigcirc) - V(\bigcirc)$		as for v-knots.
Examples	linking numbers, Alexander, Jones, HOMFLY, Reshetikhin-Turaev, Milnor numbers,		All of the above, and more - * Two kinds of linking numbers, * Alexander gets another variable, * Likely much more.		* Linking numbers. * Alexander. * Milnor invariants.
Chord Diagrams					
Relations	4T:  AS: $\gamma + \delta = 0$ STU: $\gamma = \delta - \epsilon$ IHX: $\gamma = \delta - \epsilon$		6T:  Directed AS, STU, IHX		4T:  TC:  AS, IHX, $\gamma = \delta - \epsilon$ $0 = \gamma - \delta - \epsilon$
Proj	$\mathcal{A} = \bigoplus_{n=6}^{\infty} \{\bigcirc\} / \begin{matrix} AS, 4T, \\ STU, IHX \end{matrix}$		$\mathcal{A}^V = \dots$ (I wish I understood)		$\mathcal{A}^W =$ (just trees and loops)
Moral (Proj)	metrized Lie algebras, their universal enveloping algebras and their symmetric powers.		Lie bi-algebras and their associated spaces		Cocommutative Lie bialgebras, "Ig"
UFTI	The Kontsevich integral Chern-Simons-Witten Th. Bott-Taubes conf. space Dylan's "finktoy towers" integrals		will come out of the work of Etingof and Kazhdan?		$\exp(1 \rightarrow 1)$ / BF
Higher Algebra	Drinfeld's Associators, Harish-Chandra-Duflo		E-K/ Quantized universal enveloping algebras.		Kashiwara-Vergne [Convolutions on Lie groups/algebras, the orbit method.]
Topological Implications	Algebraic knot theory, genus, unknotting numbers, ribbon knots.		