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Hyperbolic structures from link diagrams. Preliminary report.

W. Thurston demonstrated that every link in S^3 is a torus link, a satellite link or a hyperbolic link and these three categories are mutually exclusive. It also follows from work of W. Menasco that an alternating link represented by a prime diagram is either hyperbolic or a $(2, n)$ -torus link. The talk will introduce an alternative method for computing the hyperbolic structure of the complement of a hyperbolic link. It allows computing the structure directly from the link diagram. Some of its consequences will be discussed, including a surprising rigidity property of certain tangles, and the formulas that allow one to calculate the exact hyperbolic volume, as well as complex volume, of hyperbolic 2-bridge links. (Received July 01, 2012)