

Image by MIT OpenCourseWare.

[Istrail,  
Schwartz,  
King 1999]

## Counterclockwise Chain

Length 1 to next  
even-parity H node

Length >1 to next  
even-parity H node

**Clockwise Chain**

Length 1 to next  
odd-parity H node

Length >1 to next  
odd-parity H node

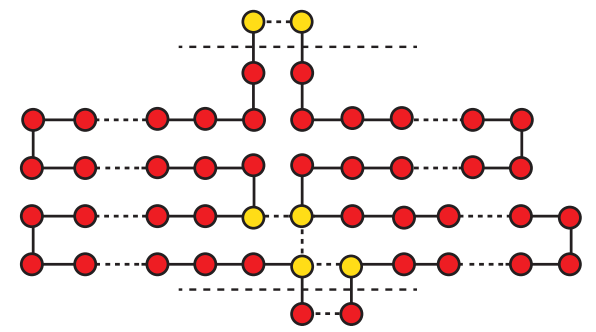
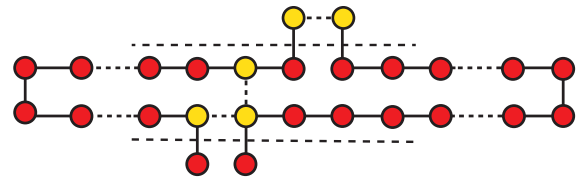
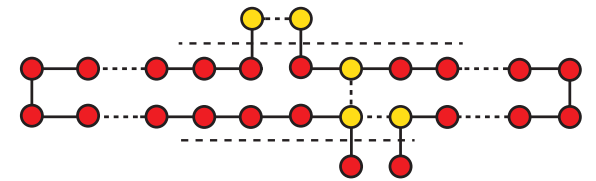
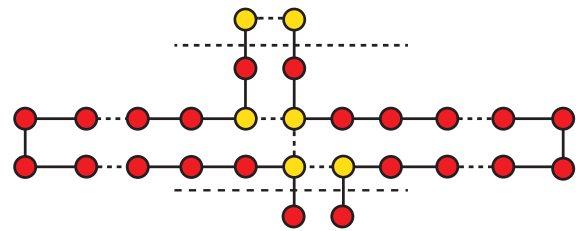
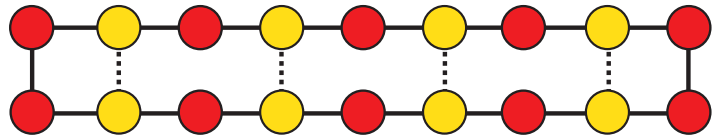


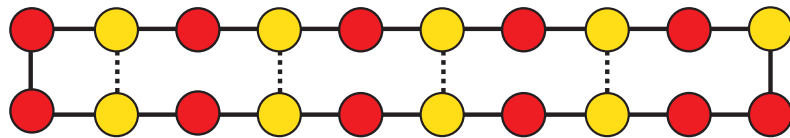
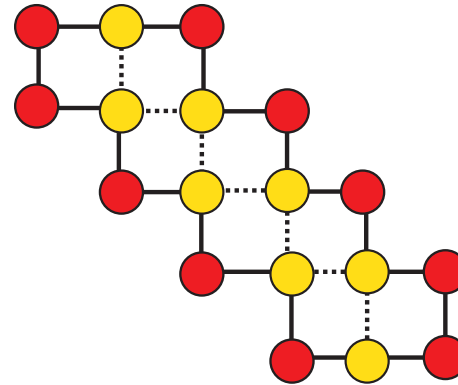
Image by MIT OpenCourseWare.  
See also <http://portal.acm.org/citation.cfm?id=545495/>.

[Newman 2002]



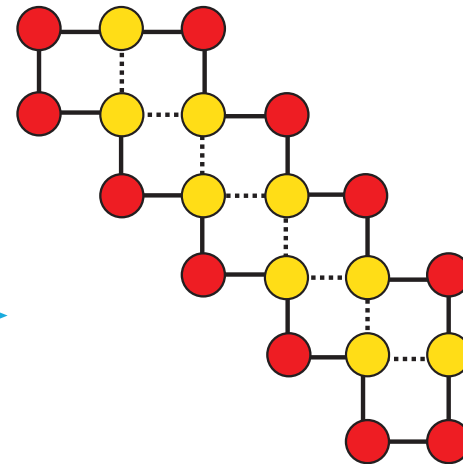
**Length 18**

**Unique  
optimal  
folding**



**Length 20**

**Unique  
optimal  
folding**



Aichholzer,  
Bremner,  
Demaine,  
Meijer,  
Sacristán,  
Soss 2003

Image by MIT OpenCourseWare.  
See also [http://erikdemaine.org/papers/RedBlue\\_CGTA2003/](http://erikdemaine.org/papers/RedBlue_CGTA2003/).

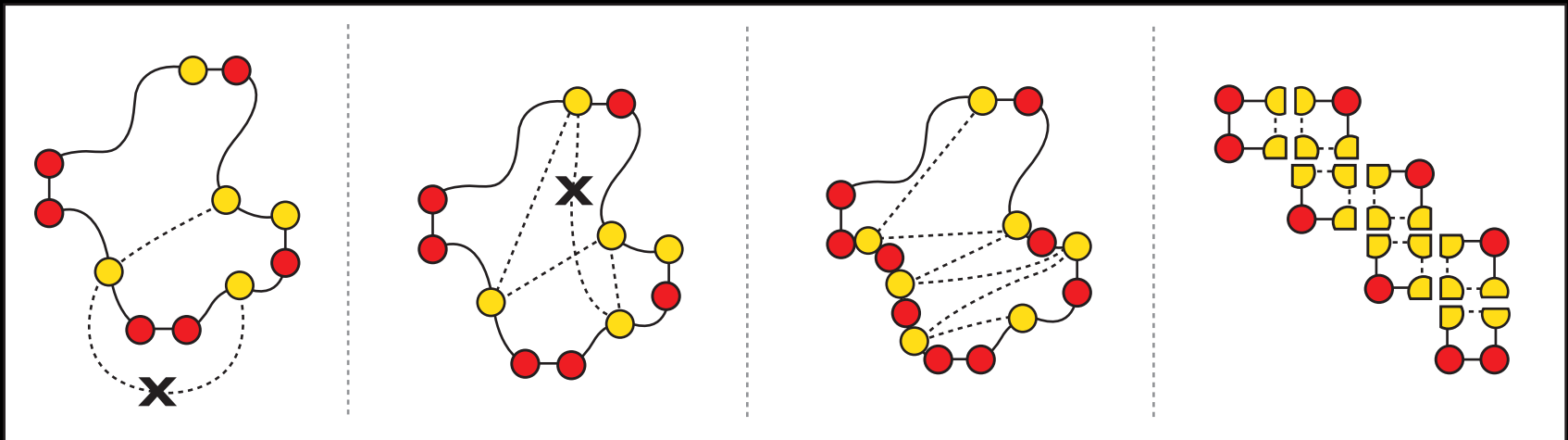
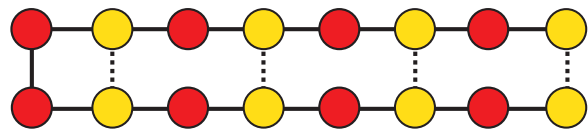


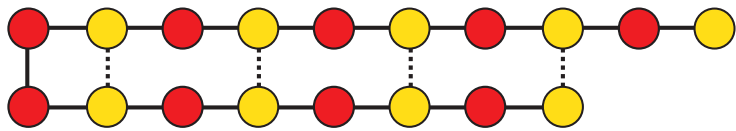
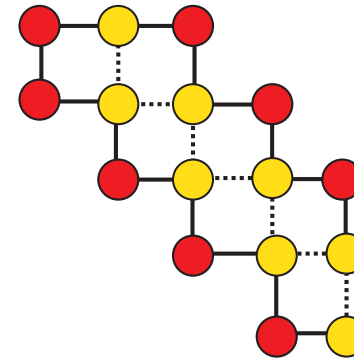
Image by MIT OpenCourseWare.  
 See also [http://erikdemaine.org/papers/RedBlue\\_CGTA2003/](http://erikdemaine.org/papers/RedBlue_CGTA2003/).

Aichholzer,  
 Bremner,  
 Demaine,  
 Meijer,  
 Sacristán,  
 Soss 2003



Length 16

Unique  
optimal  
folding



Length 18

Two  
optimal  
foldings

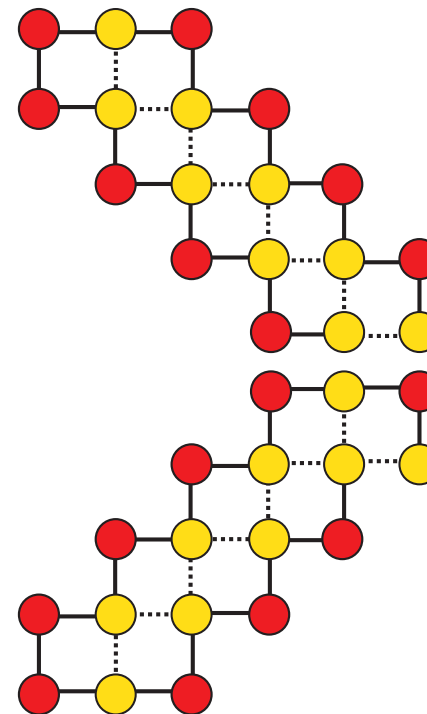
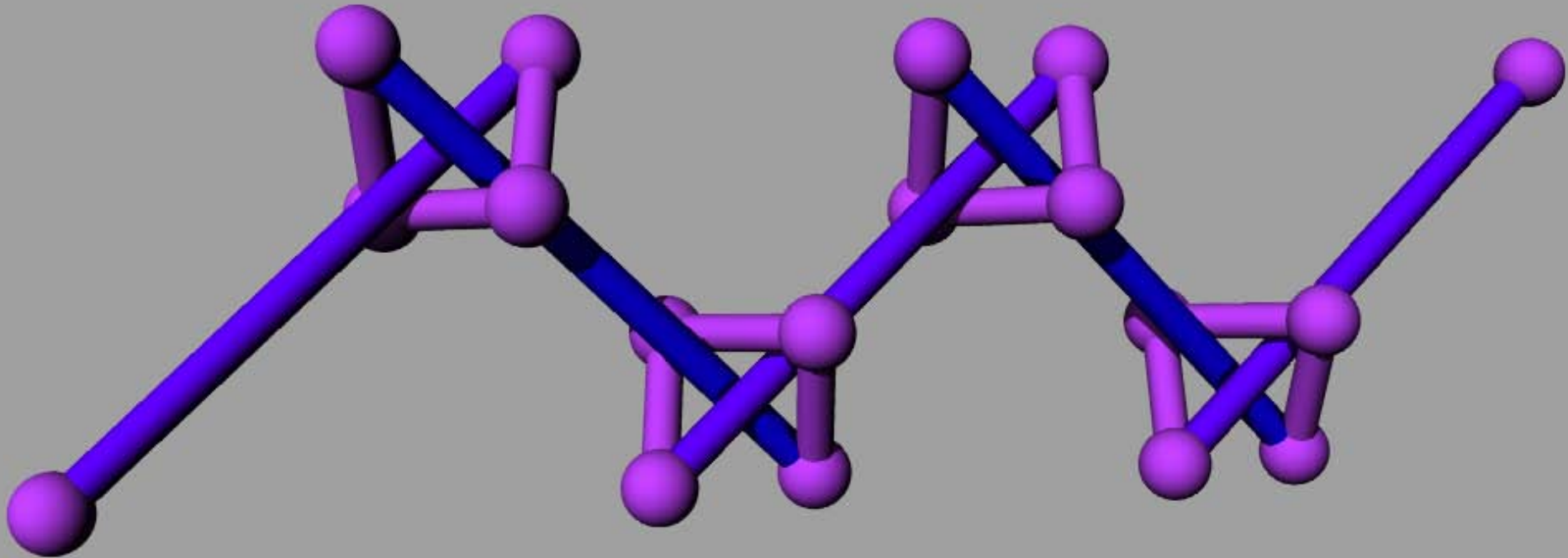


Image by MIT OpenCourseWare.  
See also [http://erikdemaine.org/papers/RedBlue\\_CGTA2003/](http://erikdemaine.org/papers/RedBlue_CGTA2003/).

Aichholzer,  
Bremner,  
Demaine,  
Meijer,  
Sacristán,  
Soss 2003



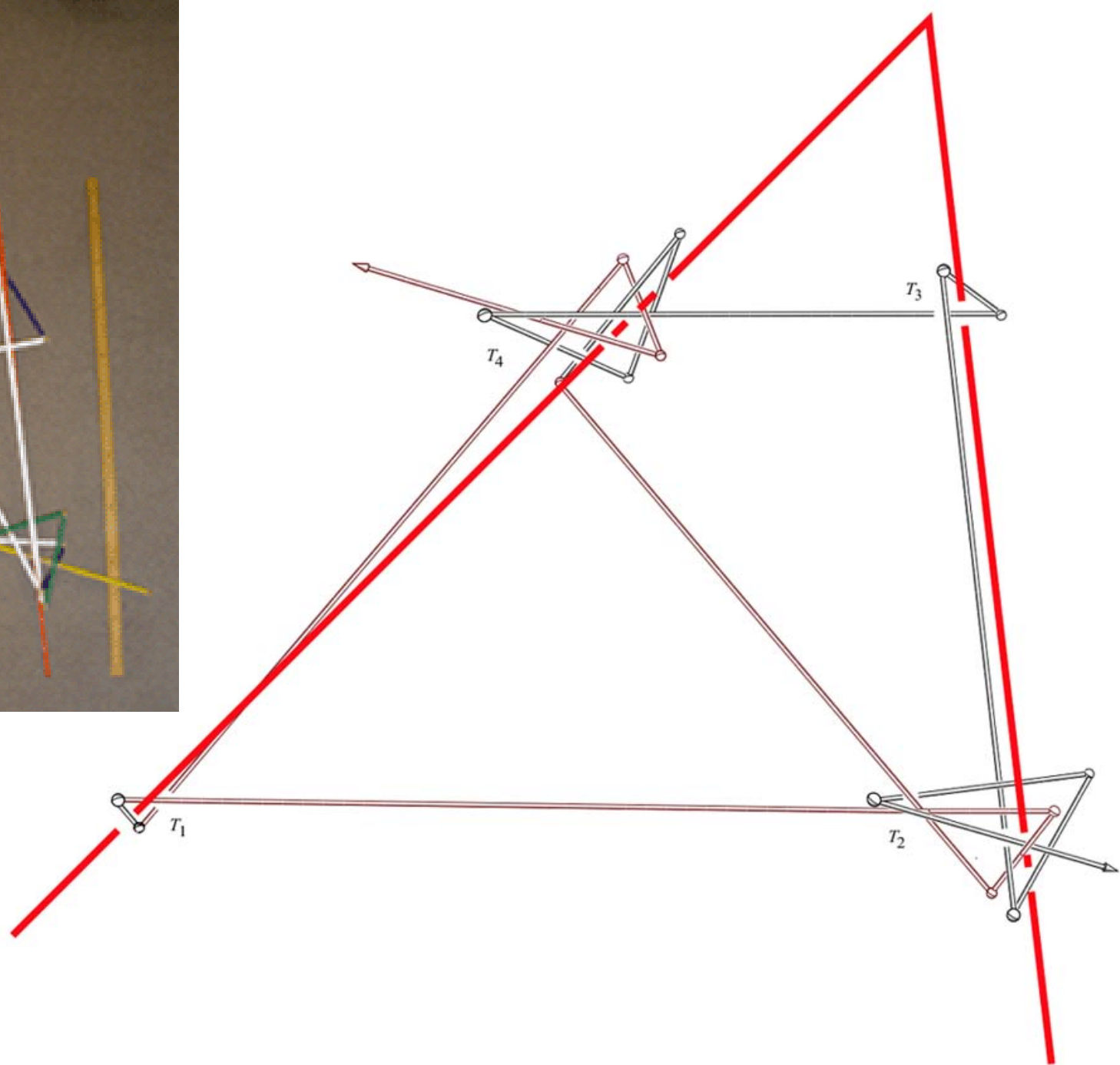
[Demaine, Langerman, O'Rourke, Snoeyink 2003]

Brunet,  
Irving,  
O'Rourke  
2004



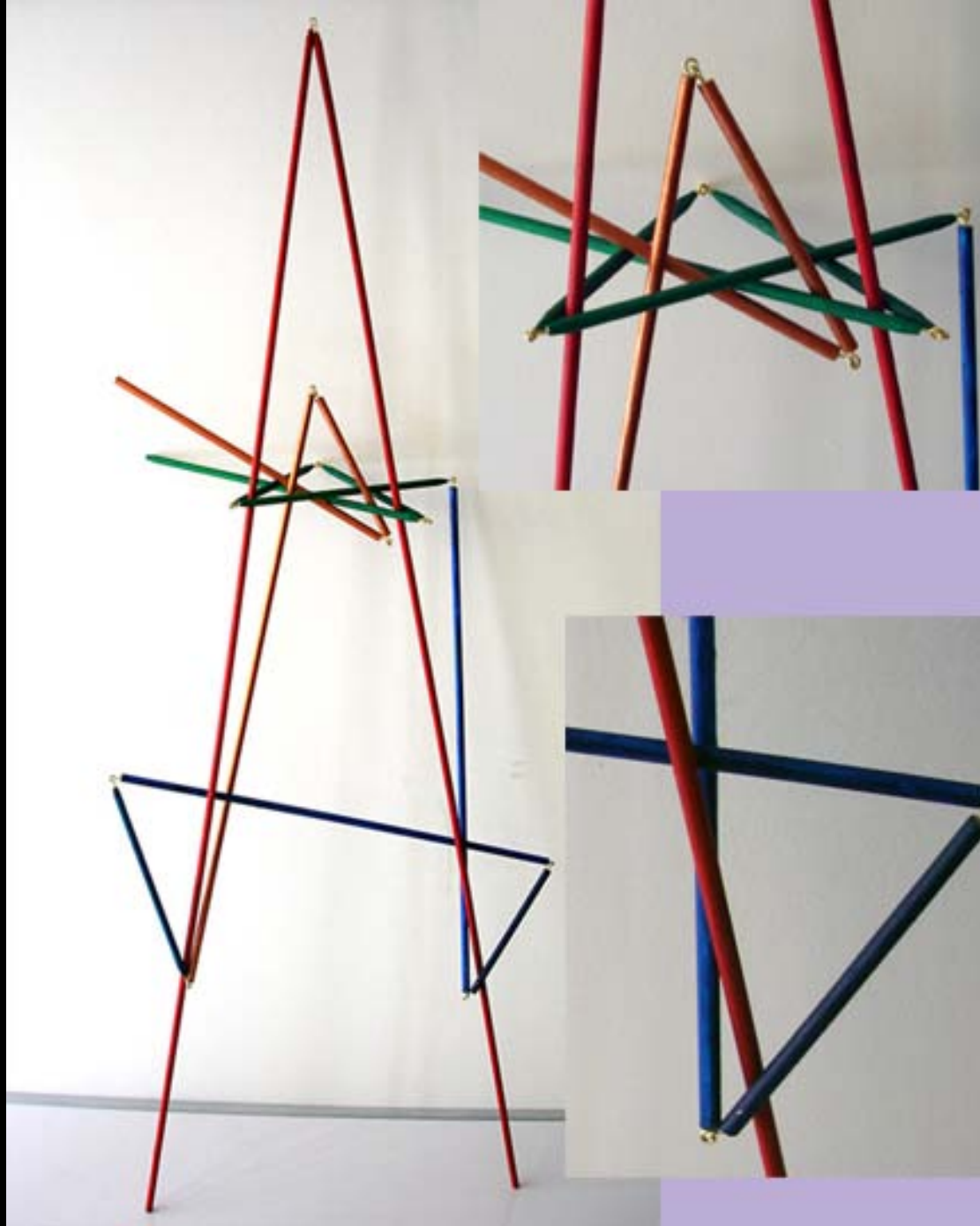
Courtesy of Joseph O'Rourke.  
Used with permission.

Glass,  
Langerman,  
O'Rourke,  
Snoeyink,  
Zhong 2004



Courtesy of Julie Glass, Stefan Langerman, Joseph O'Rourke, Jack Snoeyink, Jianyuan K. Zhong. Used with permission.

Glass, Lu,  
O'Rourke,  
Zhong 2006



Courtesy of Joseph O'Rourke. Used with permission.



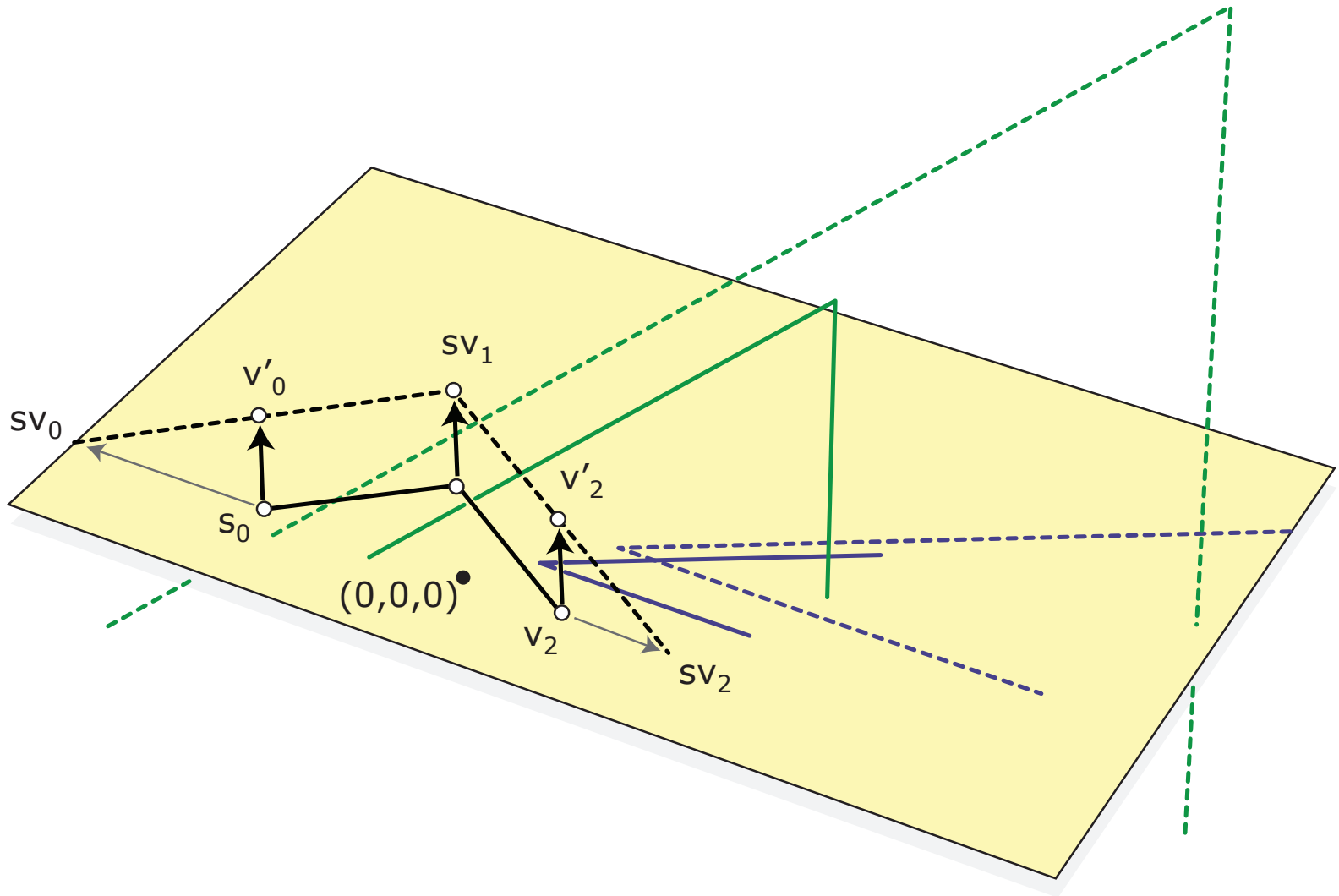


Image by MIT OpenCourseWare.  
 See also [http://erikdemaine.org/papers/InterlockedLinkages\\_SoCG2002/](http://erikdemaine.org/papers/InterlockedLinkages_SoCG2002/).

[Demaine, Langerman, O'Rourke, Snoeyink 2002]

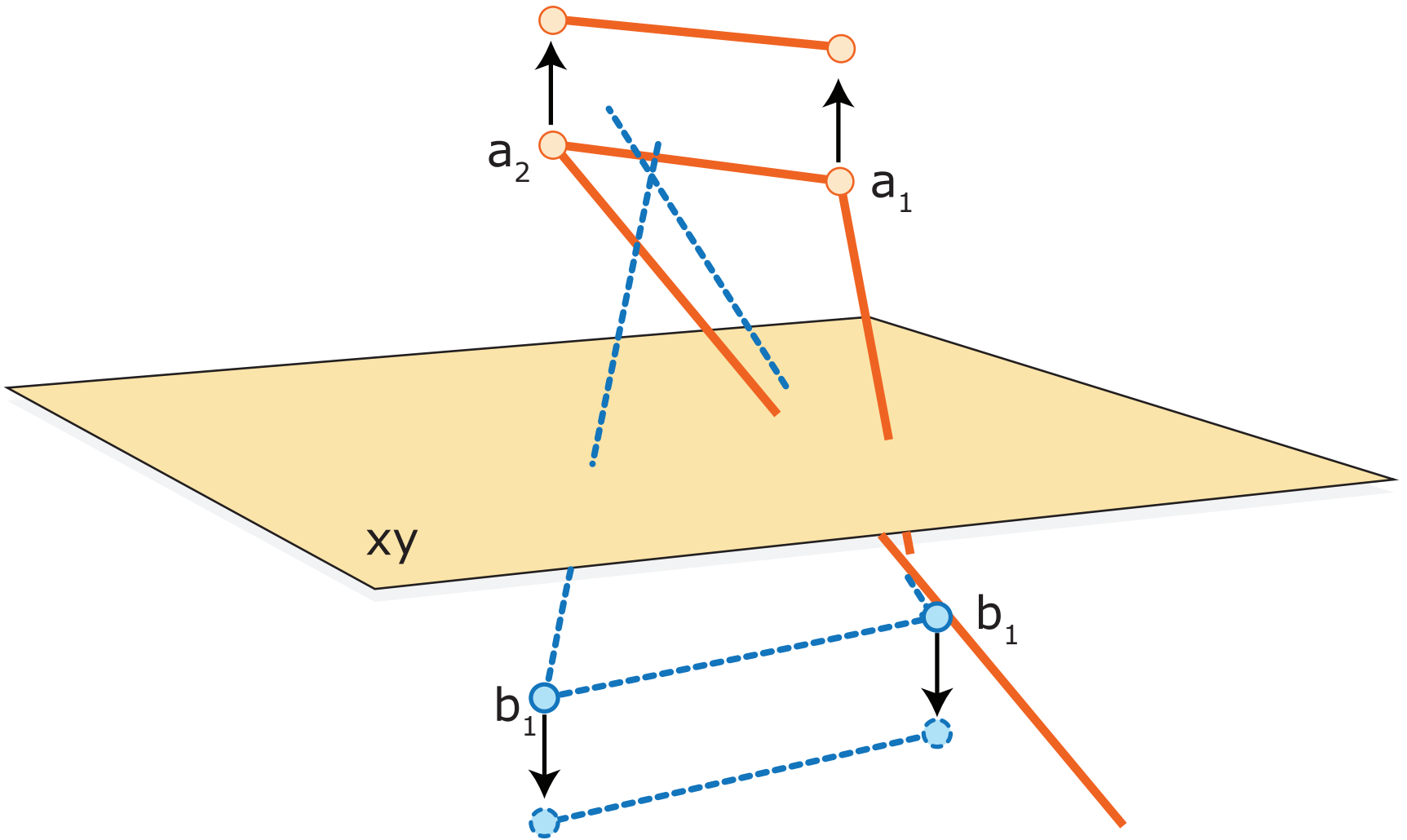
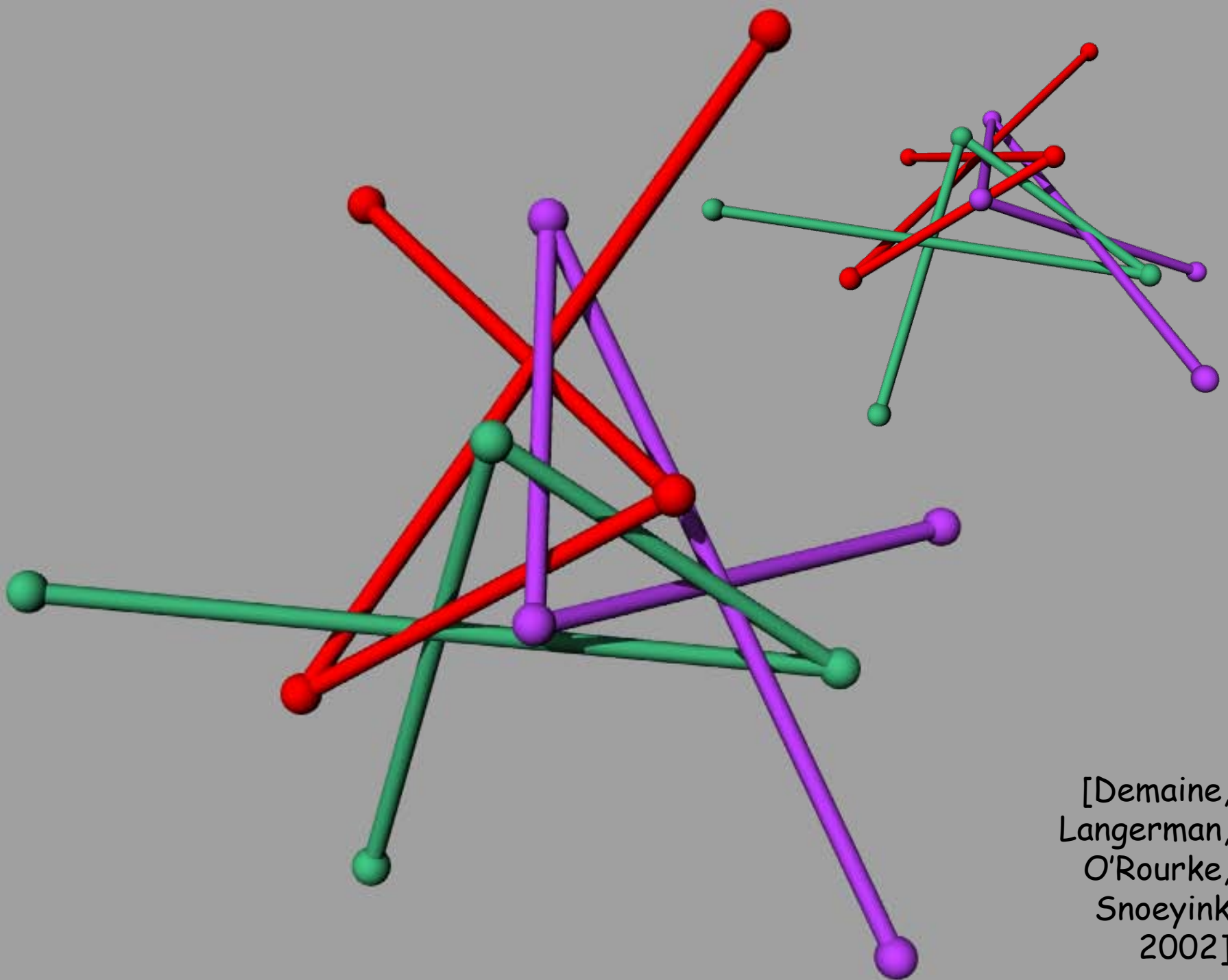
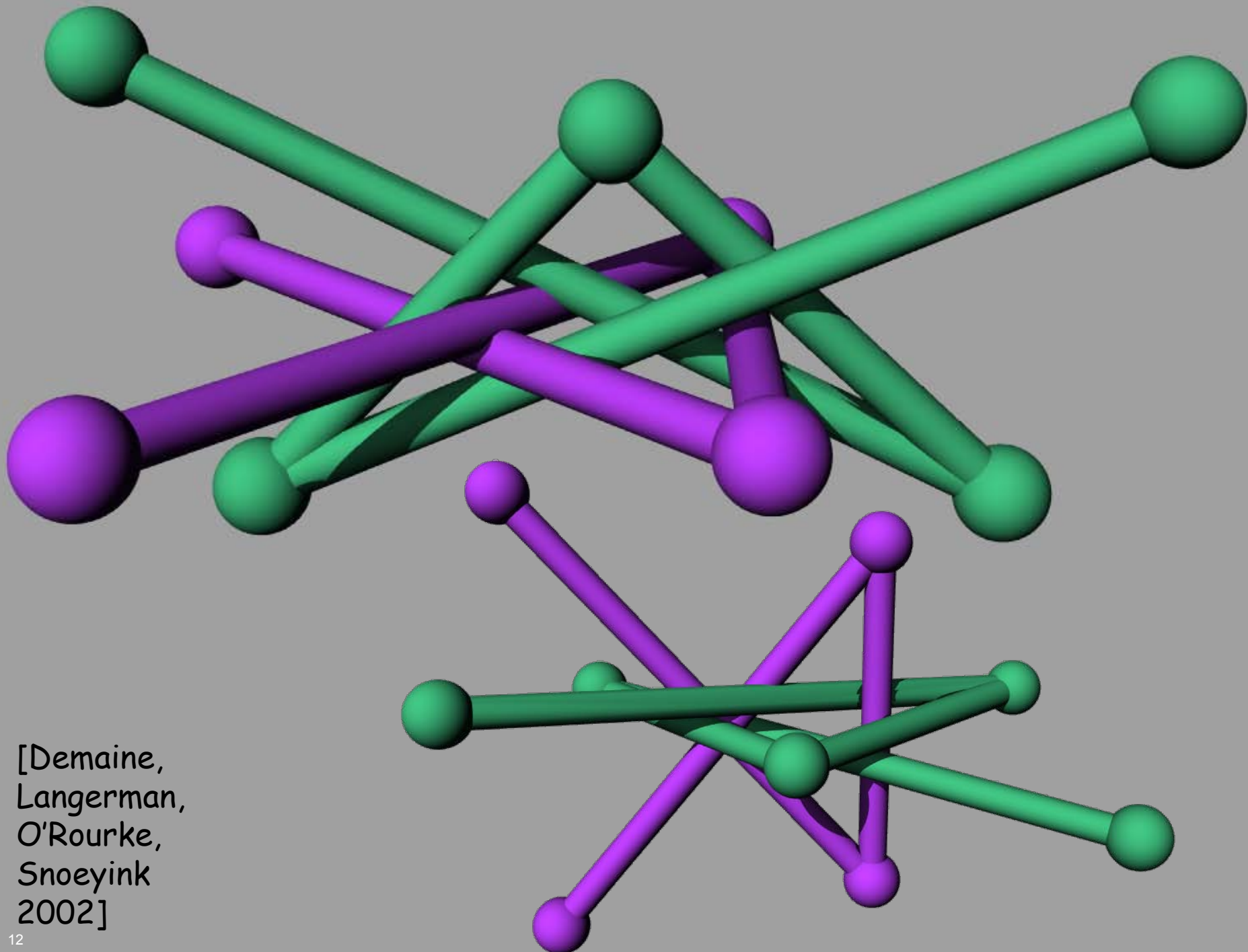


Image by MIT OpenCourseWare.  
 See also [http://erikdemaine.org/papers/InterlockedLinkages\\_SoCG2002/](http://erikdemaine.org/papers/InterlockedLinkages_SoCG2002/).

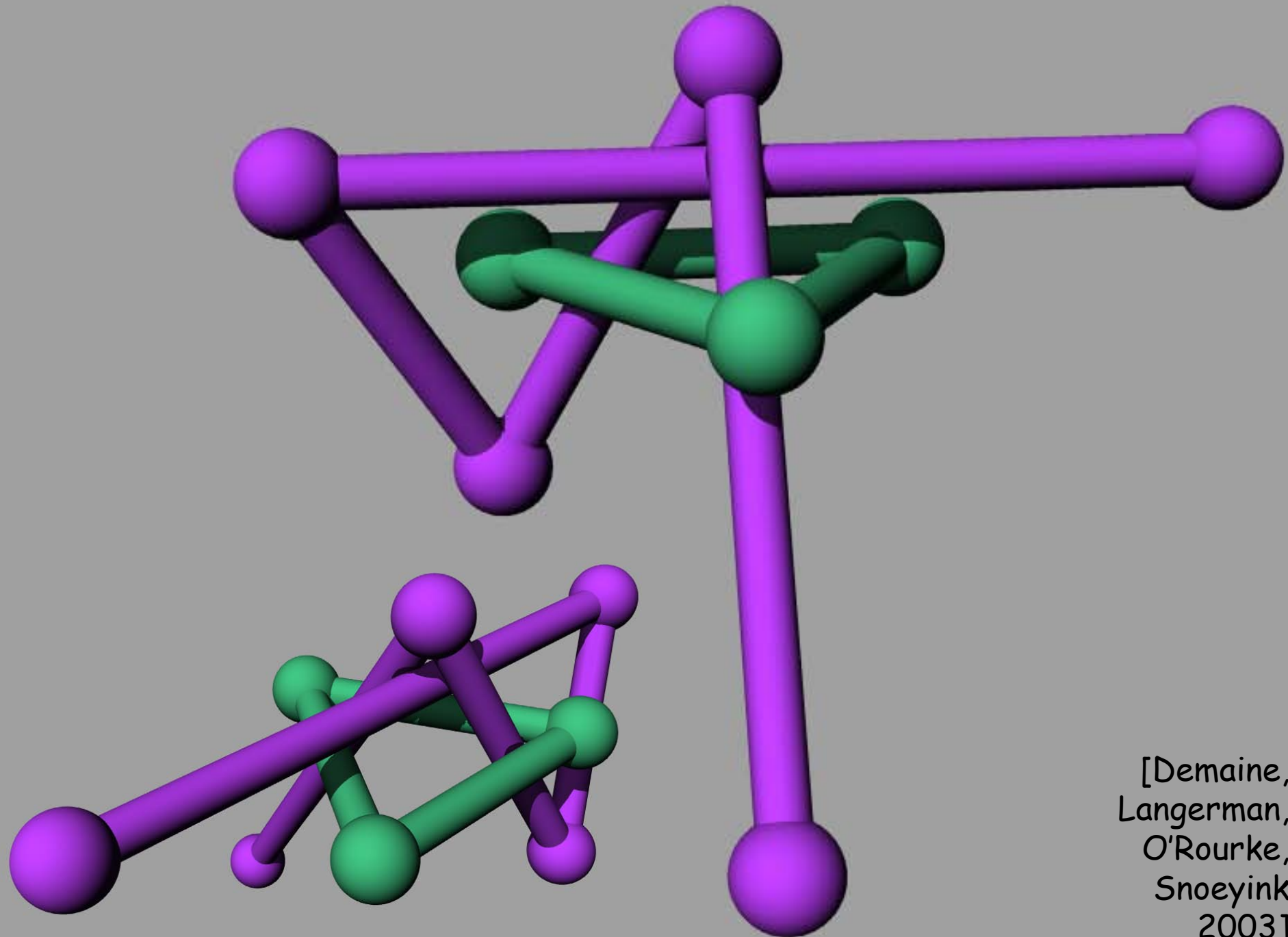
[Demaine, Langerman, O'Rourke, Snoeyink 2002]



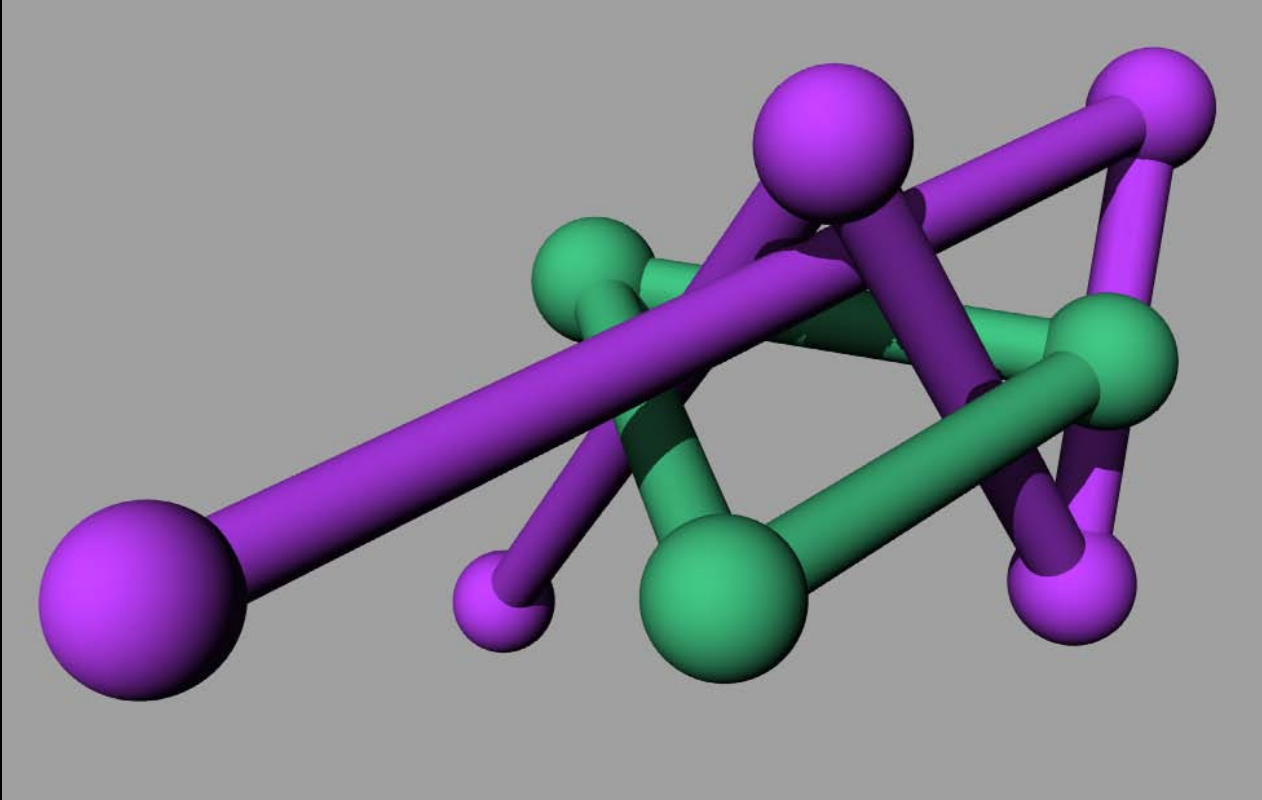
[Demaine,  
Langerman,  
O'Rourke,  
Snoeyink  
2002]



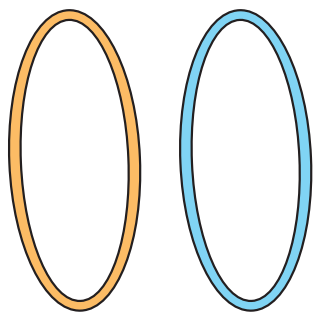
[Demaine,  
Langerman,  
O'Rourke,  
Snoeyink  
2002]



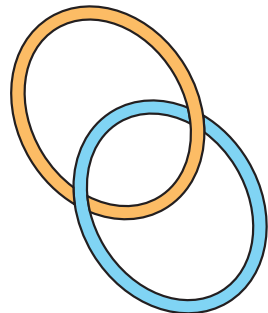
[Demaine,  
Langerman,  
O'Rourke,  
Snoeyink  
2003]



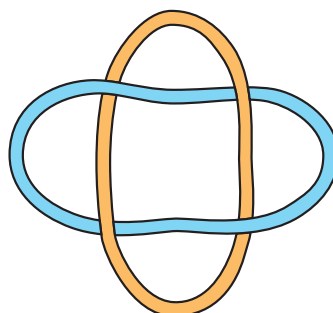
[Demaine,  
Langerman,  
O'Rourke,  
Snoeyink  
2003]



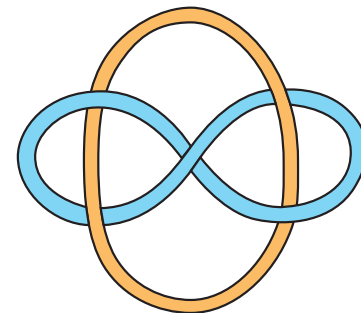
$0^2_1$



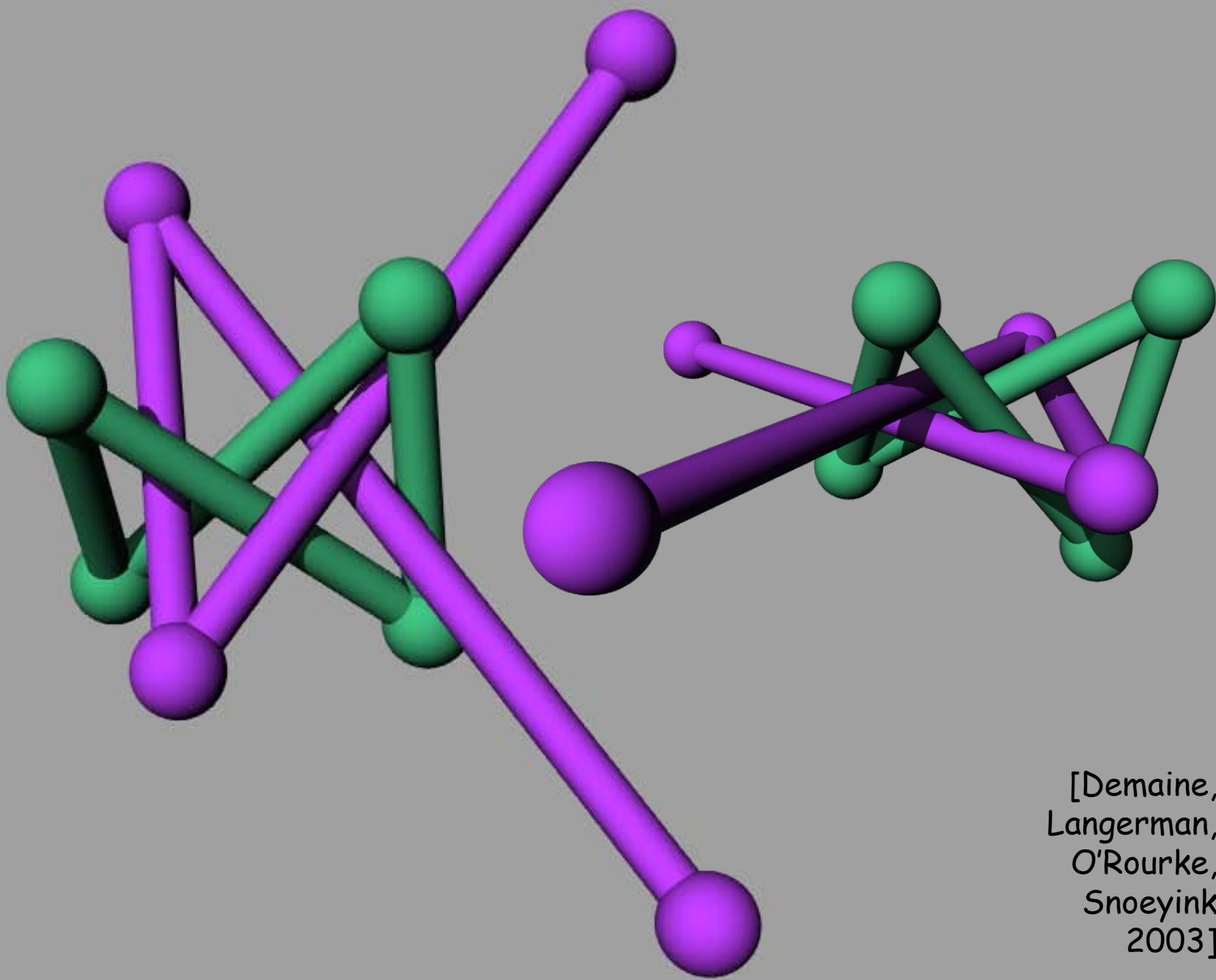
$2^2_1$



$4^2_1$



$5^2_1$



[Demaine,  
Langerman,  
O'Rourke,  
Snoeyink  
2003]

locked chains?		2		3			4			5
		univ.	rigid	univ.	fixed angle	rigid	univ.	fixed angle	rigid	rigid
2	univ.	-	-	-	-	-	-	-	-	+
	rigid	-	-	-	-	+	+	+	+	+
3	univ.	-	-	-	-	+	+	+	+	+
	fixed angle	-	-	-	+	+	+	+	+	+
	rigid	-	+	+	+	+	+	+	+	+
4	univ.	-	+	+	+	+	+	+	+	+
	fixed angle	-	+	+	+	+	+	+	+	+
	rigid	-	+	+	+	+	+	+	+	+
5	rigid	+	+	+	+	+	+	+	+	+

[Demaine, Langerman, O'Rourke, Snoeyink 2002]



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6.849 Geometric Folding Algorithms: Linkages, Origami, Polyhedra  
Fall 2012

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