1107-92-346 **Senja Barthel*** (s.barthel11@imperial.ac.uk). *Remarks on the structure of DNA in bacteriophage capsids.* Preliminary report.

Bacteriophages are viruses that infect bacteria. The viral DNA is stored in capsids in a density that is amongst the highest known. It is still a big challenge to illuminate the structure of the DNA inside the capsid although numerous studies have been undertaken.

Toroidal structures of condensed DNA have been reported already 30 years ago. Starting from a naïve model that assumes the DNA to be arranged as an untwisted spool in a torus, we ask what knots arise if the ends of the DNA are joint directly or after passing one end of the DNA through the hole in the middle of the torus.

We show that torus knots occur if and only if one end of the DNA strand is passed exactly once through the hole and that knots of extremely high crossing number are generated if one end is passed through several times. This behaviour corresponds to experimentally observed knot types. (Received January 19, 2015)