**Short explanation of the presentation**:

Missing appendage rates and patterns in snow crab (*Chionoecetes opilio*) in the northwestern Atlantic was analysed based on 16 years of bottom trawl survey data and biotic and abiotic causes were discussed.

**Title:**

Rates and patterns of missing appendages in snow crab (*Chionoecetes opilio*) in the northwestern Atlantic.

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**Abstract: (currently 465 words):**

Crustaceans may lose their pereiopods (i.e. walking legs or chelipeds) due to predation, intra- and inter-specific competition, through moulting process or during the commercial fishing activity. Missing pereiopod patterns in a snow crab (*Chionoecetes opilio*) population were analyzed based on a long-running annual bottom survey data in the southern Gulf of Saint Lawrence, northwestern Atlantic. Variation in appendage loss rates were examined for a number of factors. Pereiopods loss rates were regressed over sex, maturity stage and size, as well as the condition (i.e. relative age) of its carapace. Spatio-temporal variation was also considered.

Preliminary results showed that a significant difference between the sexes and the rates for immature crab were generally low and constant over all sizes, they were found to be two to three times higher in sexually mature versus immature crab. In addition, these rates were twice as high in smaller mature males as for larger ones. This pattern is even apparent in newly moulted crab, with crab which had moulted in previous years showing only a moderate increase in pleopod loss. In addition, the loss rates were twice as high in smaller mature males than for larger ones. Such results strongly hint at mating competition as the main mechanism for pereiopod loss. The rates for females were about half those of males and were more or less constant with crab size. In males the 2nd pereiopods had the highest loss rates whereas the chelipeds and 5th pereiopods had the lowest. In females, the 2nd and 5th pereiopods had the highest rates whereas the chelipeds had a rate less than half that of any other pereiopods. Pereiopod loss rates in females were about 60% those observed in males. Mature females similarly showed higher rates than immature ones with newly moulted females having a moderate increase in pereiopod loss rates than older mature females. This may be a function of the longer life expectancy of mature female versus male snow crab.

Annual changes in the pereiopod rates showed some correlation with underlying population dynamics, most notably high abundance levels in large males. Results suggest that intra-specific competition between crabs may be the main drivers in the appendage loss based on the comparison between non-commercially exploited (females and males smaller than 95 mm CW) and commercially exploited crabs (males larger than 95 mm CW only) rather than commercial fishing activity induced.