Srní

Deformation theory – Frégier

- quantization: $p \rightsquigarrow \hat{P} : \psi \mapsto -i\hbar \frac{\partial}{\partial x} \psi$
  $x \rightsquigarrow \hat{X} : \psi \mapsto x\psi$

$\to f *_\hbar g := (\hat{f} \circ \hat{g})^{\wedge^{-1}}$

Thm (Moyal – Grönwald)

$*_\hbar = * + B_1(-,-)\hbar + B_2(-,-)\hbar^2 + \dots$

$\mu_t = \mu_0 + t\mu_1 + \dots$

$[a,b]_i := \frac{1}{2}(\mu_i(a,b) - \mu_i(b,a))$

Prop. $[a,b]_1$ is Poisson.

- converse: given $(\cdot, \{\ \})$, $\exists ?\ \mu_t$
- a: (Концевич) $\square$ A

- mathematical structures can similarly be deformed
  $\to$ but modulo isomorphisms
- e.g., $GL(V) \circlearrowright L(V \otimes V, V)$
  $(g \rhd \mu)(a,b) := g(\mu(g^{-1}a, g^{-1}b))$

Thm $T_\mu \mathrm{Ass} = H^1_{Hoch}$