Radiation and diffraction by plasma aperture relevant to RIT enhanced ion acceleration (18pB1-4)

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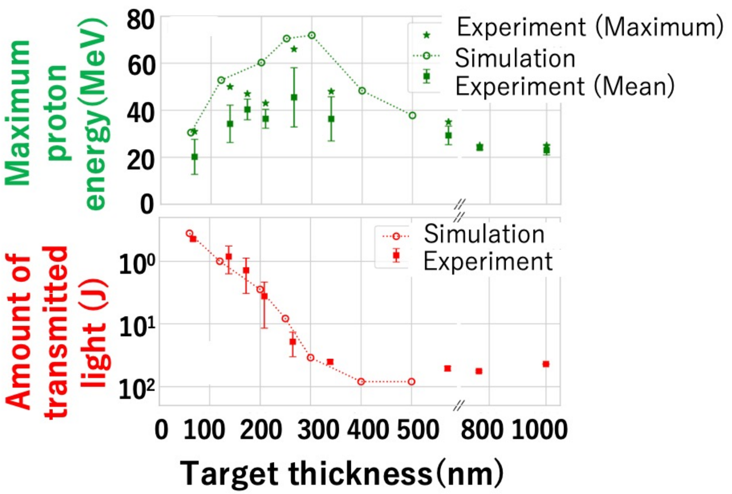
Background and Purpose

Previous study : Elucidation of relationship between the **amount** of transmitted light and ion energy[1).



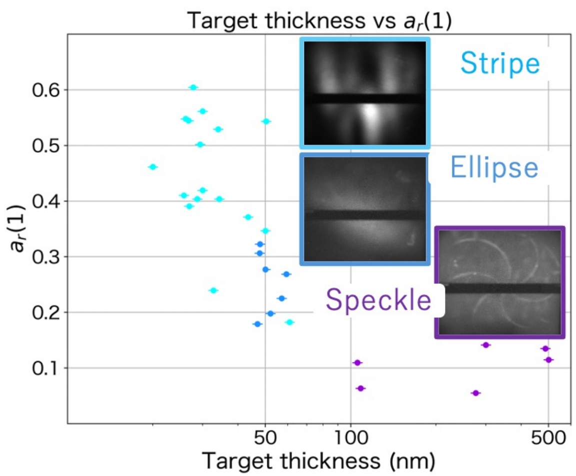
→ Possibility that the **spatial distribution pattern** of transmitted light is related to the ion energy.

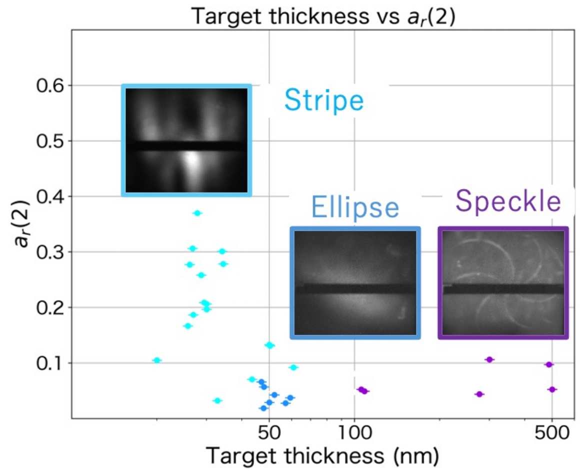
Purpose : Quantification of **spatial distribution pattern** of transmitted light.

1) Dover. Nicholas P., et al. Light: Science & Applications 12.1 (2023): 71.

Results and Summary

$a_r\ (n)$: parameter representing the relative strength of the Fourier coefficient at the horizontal n-times frequency.





Stripe → $a_r(1)$: *relatively large* , $a_r(2)$: *relatively large*
Ellipse → $a_r(1)$: *relatively large* , $a_r(2)$: *relatively small*
Speckle → $a_r(1)$: *relatively small* , $a_r(2)$: *relativelysmall*

→ $a_r\ (n)$ is the candidate parameter for **classification of spatial distribution pattern**.