

3. A beam of neutrons is moving with a speed of $v = 3000\text{m/s}$ and is diffracted from a crystal of table salt (NaCl), which has an interplanar spacing of $d = 0.282\text{nm}$. (See figure.)

- Find the de Broglie wavelength of the neutrons.
- Find the angle θ of the first interference maximum.
- How many interference maxima can you observe? What is the largest diffraction angle for which an interference maximum can be observed?

