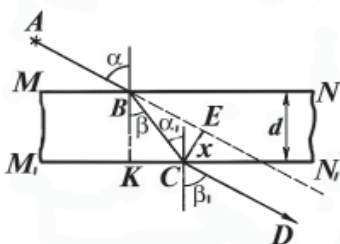


**5. Yorug'likning dispersiyasi: elektromagnit to'liqinning fazoviy va to'la tezliklari. Dispersiya qonuniyatlari. Normal va anomal dispersiya.**  
**Yorug'likning yutilish chegarasidagi dispersiya hodisalari.**

**1–masala.** Yorug'lik nuri tekis parallel shisha plastinkaga  $30^\circ$  burchak ostida tushadi. Shishaning sindirish kórsatkichi 1,5. Agar nurlar orasidagi 1,94 sm bo'lsa,



plastinkaning qalinligi nechaga teng?

Berilgani:  $\alpha=30^\circ$ ;  $n=1,5$ ;  $x=1,94 \text{ sm}=1,94 \cdot 10^{-2} \text{ m}$ .

Topish kerak:  $d$ -?

Yechilishi: Yorug'lik tekis parallel plastinkadan o'tkanda uning qancha masofaga siljishi quydagi formula bilan aniqlaymiz:

$$x = d \frac{\sin(\alpha - \beta)}{\cos\beta} = d(\sin\alpha - \cos\beta \cdot \operatorname{tg}\beta)$$

Bu ifodadan plastinkaning qalinligini topsak:  $d = \frac{x \cos\beta}{\sin(\alpha - \beta)}$  ekanligi kelip

chiqadi. Endi yorug'likning sinish qonunidan foydalanib, nurning sinish burchagi  $\beta$  ni topamiz:

$$\sin\beta = \frac{\sin\alpha}{n} = \frac{\sin 30^\circ}{1,5} = \frac{0,5}{1,5} = 0,3333; \quad \beta = 19^\circ 28',$$

$d$  ni hisoblaymiz:

$$d = \frac{1,94 \cdot 10^{-2} \text{ m} \cdot \cos 19^\circ 28'}{\sin(30^\circ - 19^\circ 28')} = \frac{1,94 \cdot 10^{-2} \cdot 0,9426}{0,2005} \text{ m} = 0,1 \text{ m}.$$