

Fig 3.1a: Ionisationskammer (schematisch)

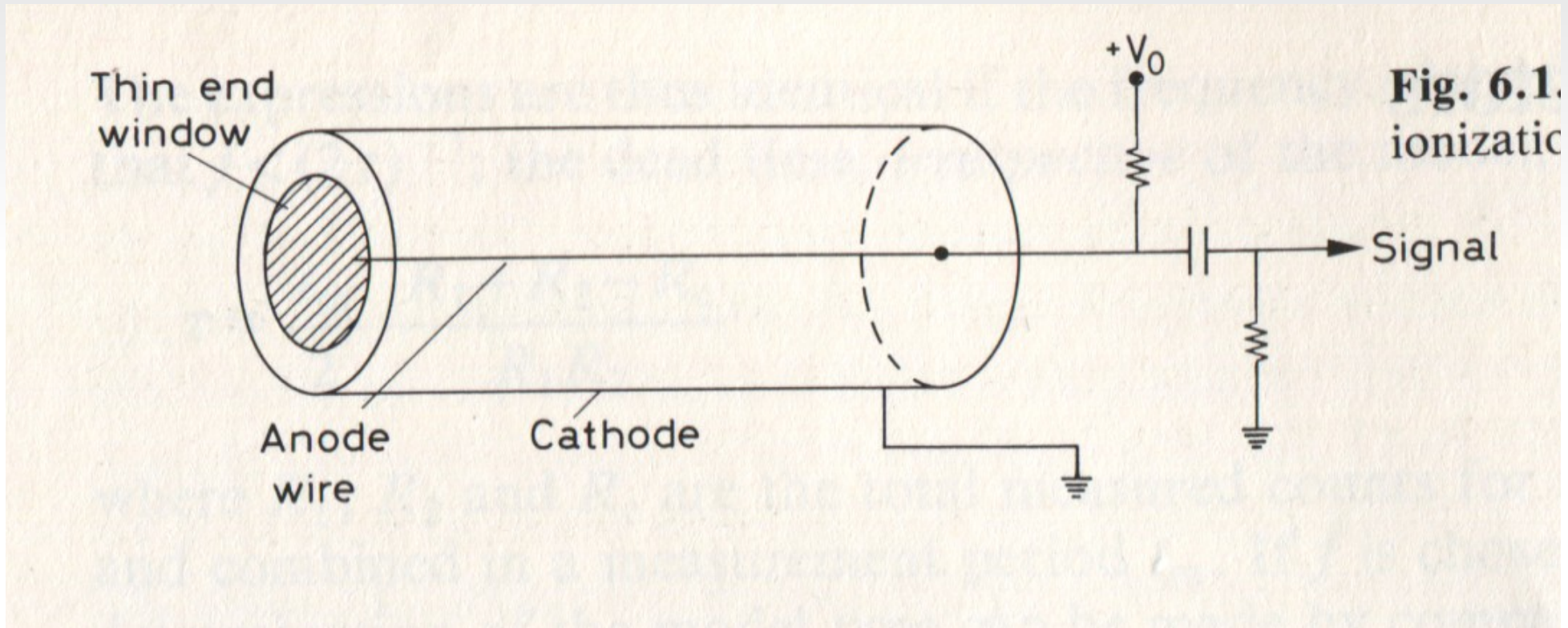


Fig 3.1b: Kennlinie einer Ionisationskammer

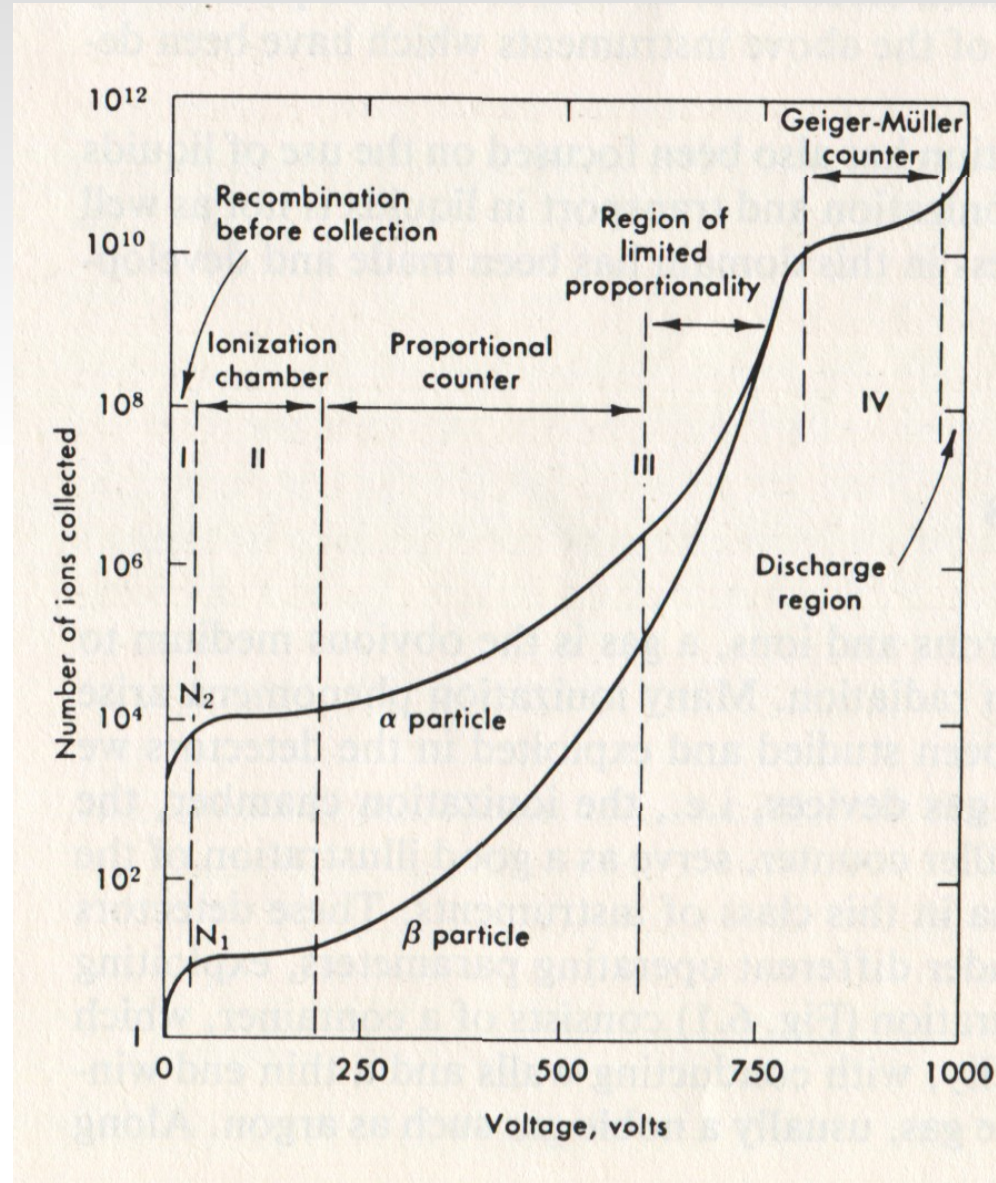


Fig 3.2: Ionisation für verschiedene Gase

Fano-Faktor



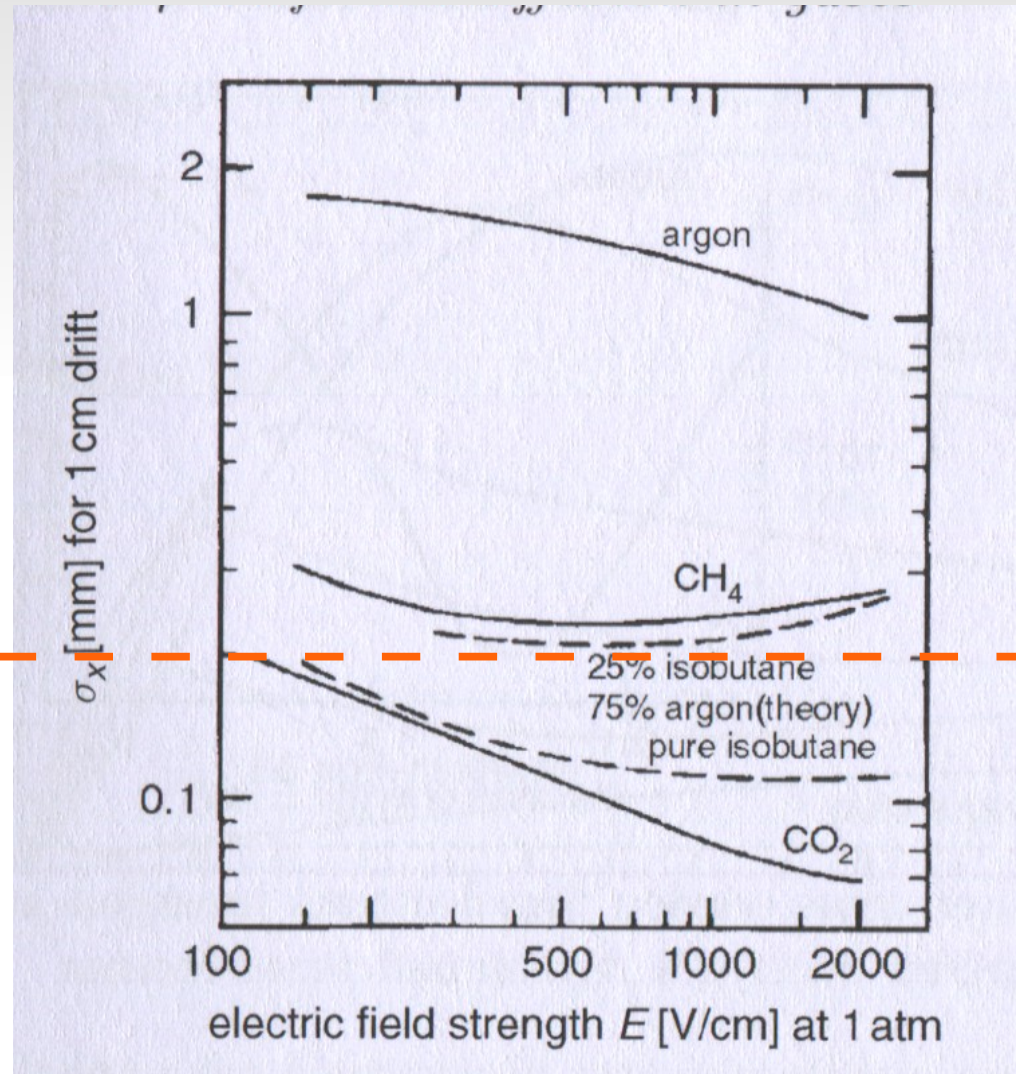
	Excitation potential [eV]	Ionization potential [eV]	Mean energy for ion-electron pair creation [eV]
H ₂	10.8	15.4	37
He	19.8	24.6	41
N ₂	8.1	15.5	35
O ₂	7.9	12.2	31
Ne	16.6	21.6	36
Ar	11.6	15.8	26
Kr	10.0	14.0	24
Xe	8.4	12.1	22
CO ₂	10.0	13.7	33
CH ₄		13.1	28
C ₄ H ₁₀		10.8	23

Gas	<i>F</i>
Ar 100%	0.2 ^{+0.01} -0.02
	<0.40 ± 0.03
Ar + 80% Xe	<0.21 ± 0.03
Ar + 24% Xe	<0.23 ± 0.02
Ar + 20% Xe	<0.16 ± 0.02
Ar + 5% Xe	<0.14 ± 0.03
Ar + 5% Kr	<0.37 ± 0.06
Ar + 20% Kr	<0.12 ± 0.02
Ar + 79% Kr	<0.13 ± 0.02
Xe 100%	<0.15 ± 0.01
	<0.15 ± 0.03
Kr 100%	<0.23 ± 0.01
	<0.19 ± 0.02
Kr + 1.3% Xe	<0.19 ± 0.01
Kr + 20% Xe	<0.21 ± 0.02
Kr + 40% Xe	<0.22 ± 0.01
Kr + 60% Xe	<0.21 ± 0.01
Kr + 95% Xe	<0.21 ± 0.01

Fig 3.3: Beweglichkeit von Ionen in Gasen

Gas	λ_{ion} [cm]	D_{ion} [cm ² /s]	μ_{ion} $\left[\frac{\text{cm/s}}{\text{V/cm}} \right]$
H ₂	$1.8 \cdot 10^{-5}$	0.34	13.0
He	$2.8 \cdot 10^{-5}$	0.26	10.2
Ar	$1.0 \cdot 10^{-5}$	0.04	1.7
O ₂	$1.0 \cdot 10^{-5}$	0.06	2.2

Fig 3.4: Diffusionsbreite einer Elektronwolke nach 1cm Drift



Begrenzung der Ortsauflösung

Fig 3.5: Ramsauer-Effekt

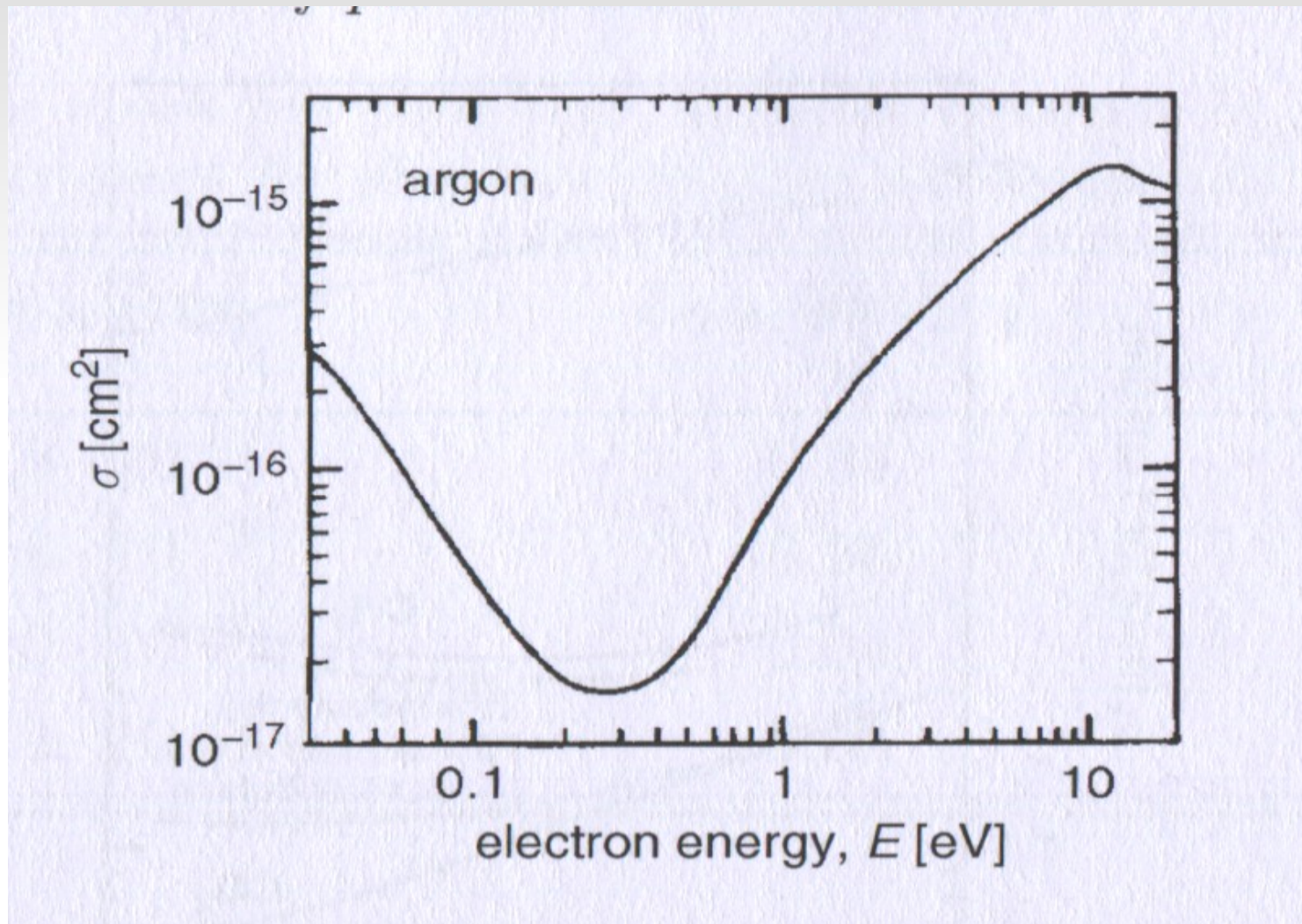


Fig 3.6: v_{drift} für Elektronen bei Verunreinigungen

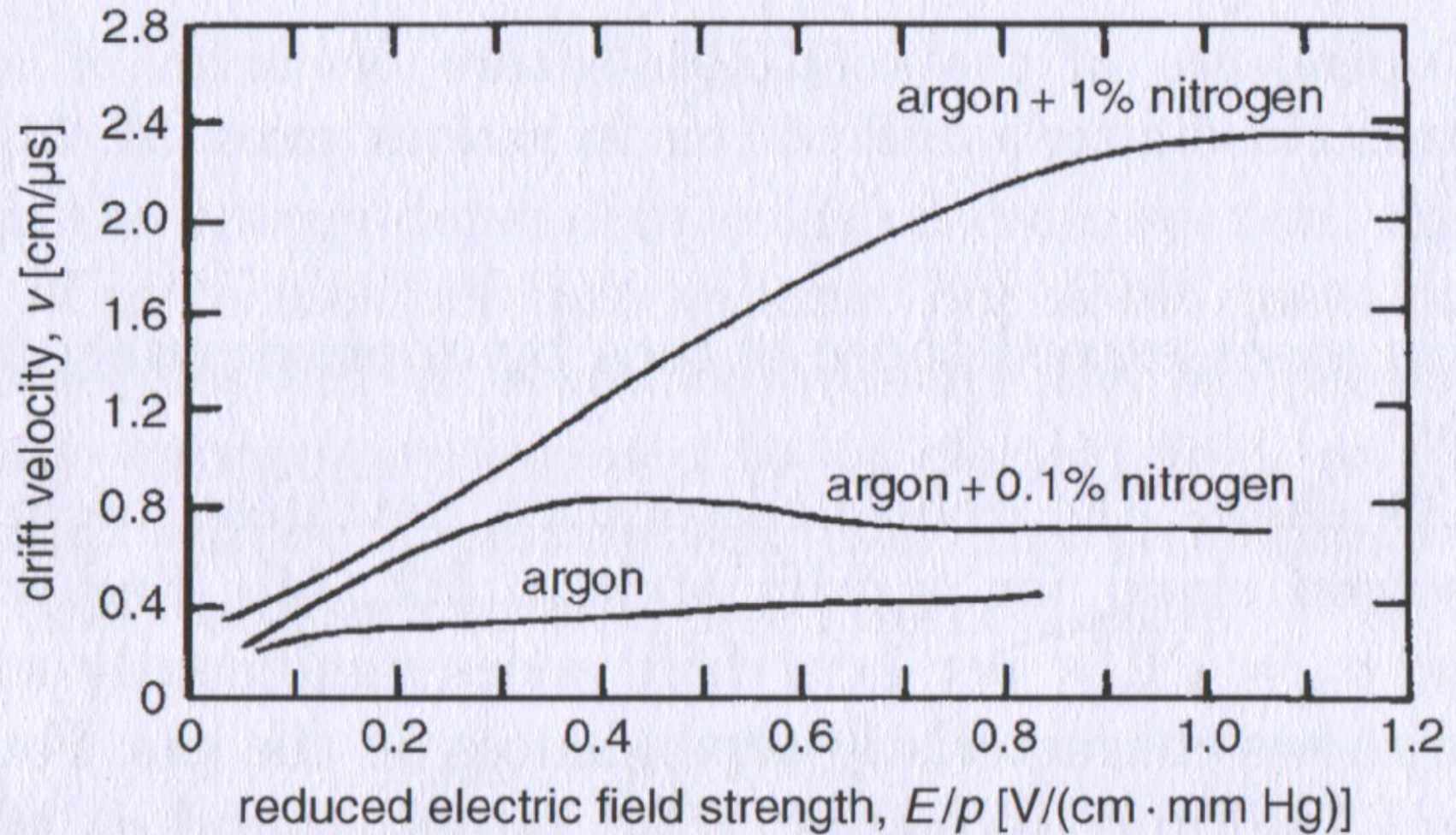


Fig 3.7: v_{drift} für Elektronen in Ar-Isobutan-Mischungen

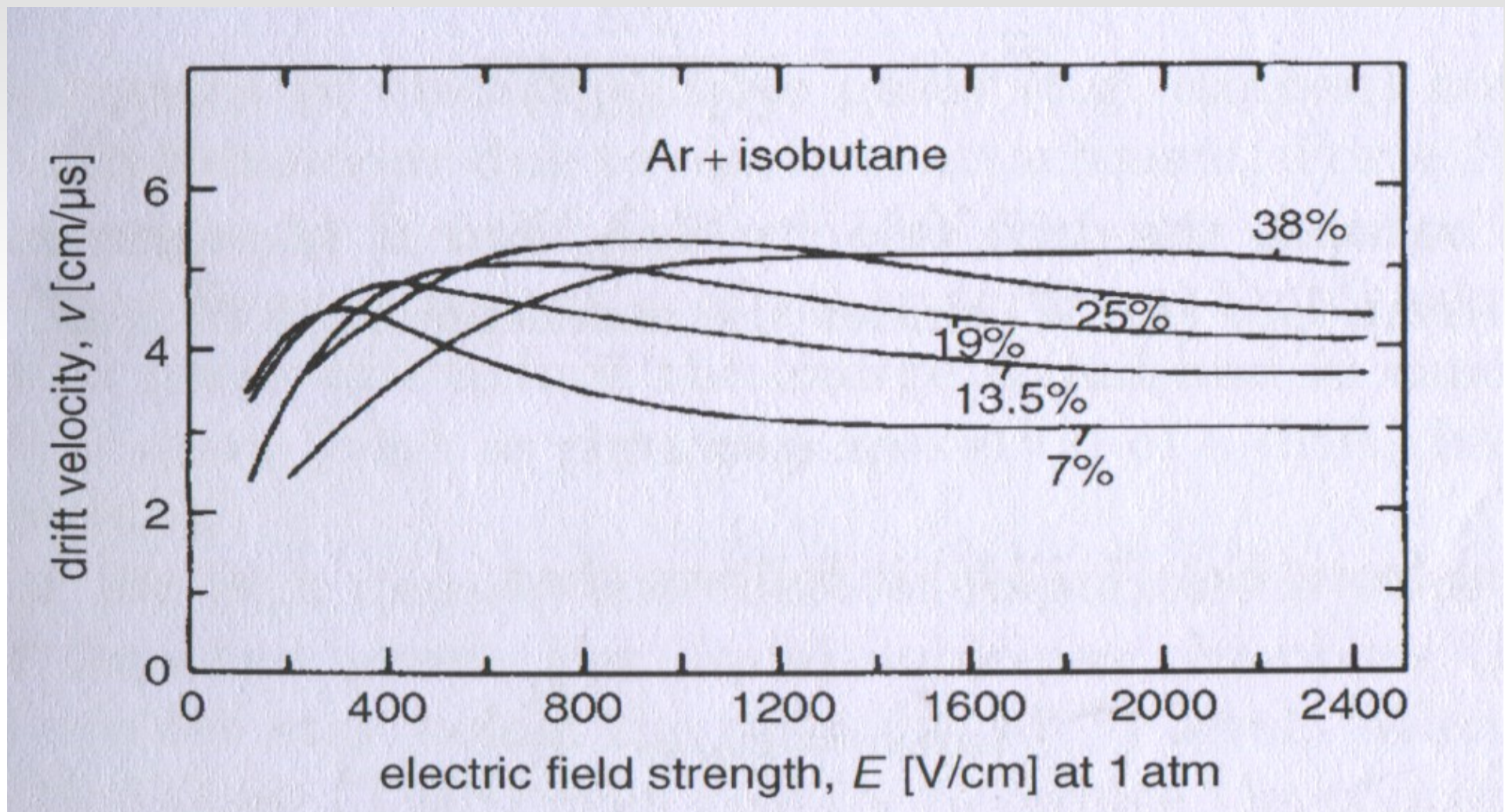


Fig 3.8: Drift von Elektronen in Magnetfeldern

