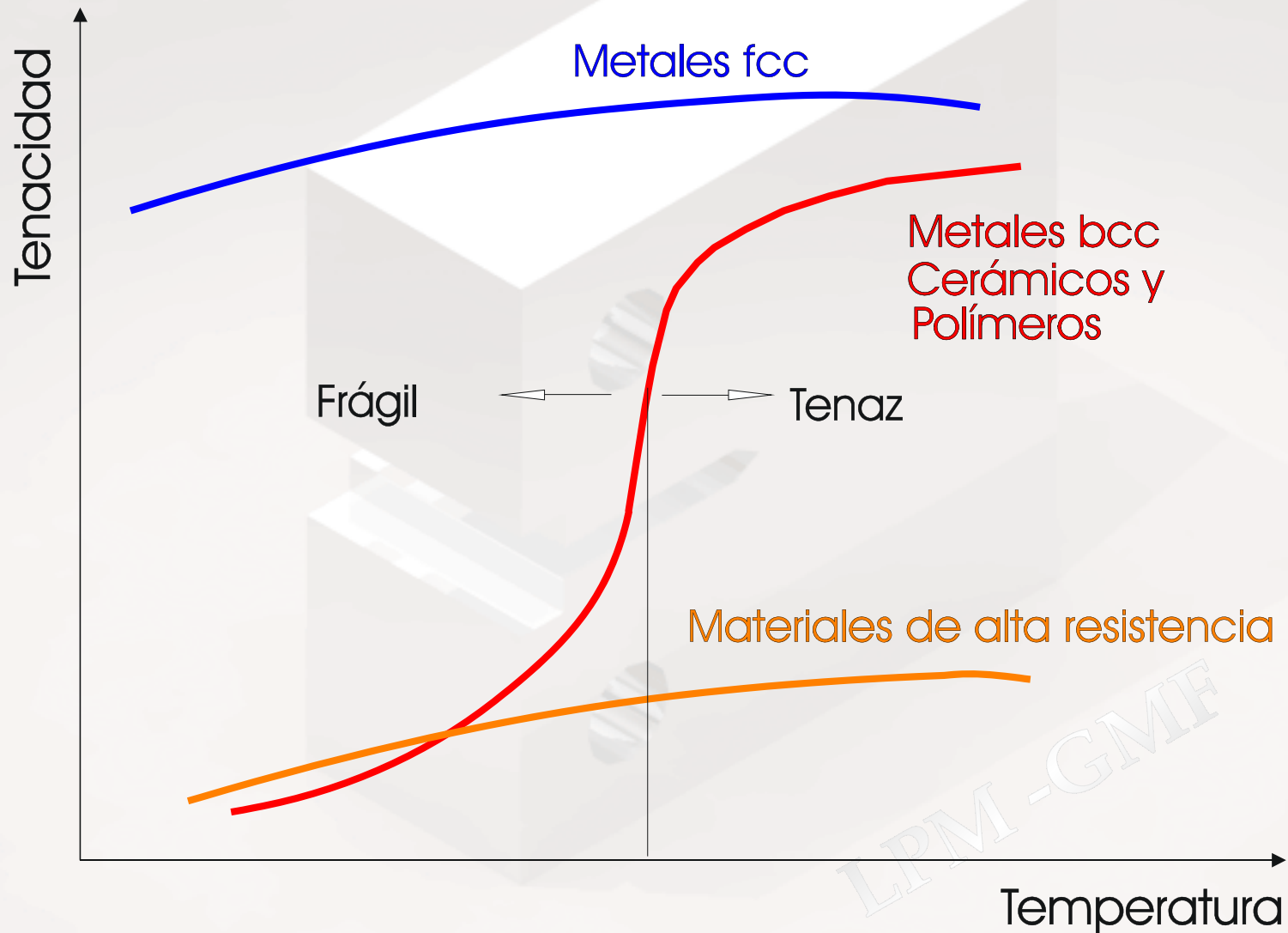


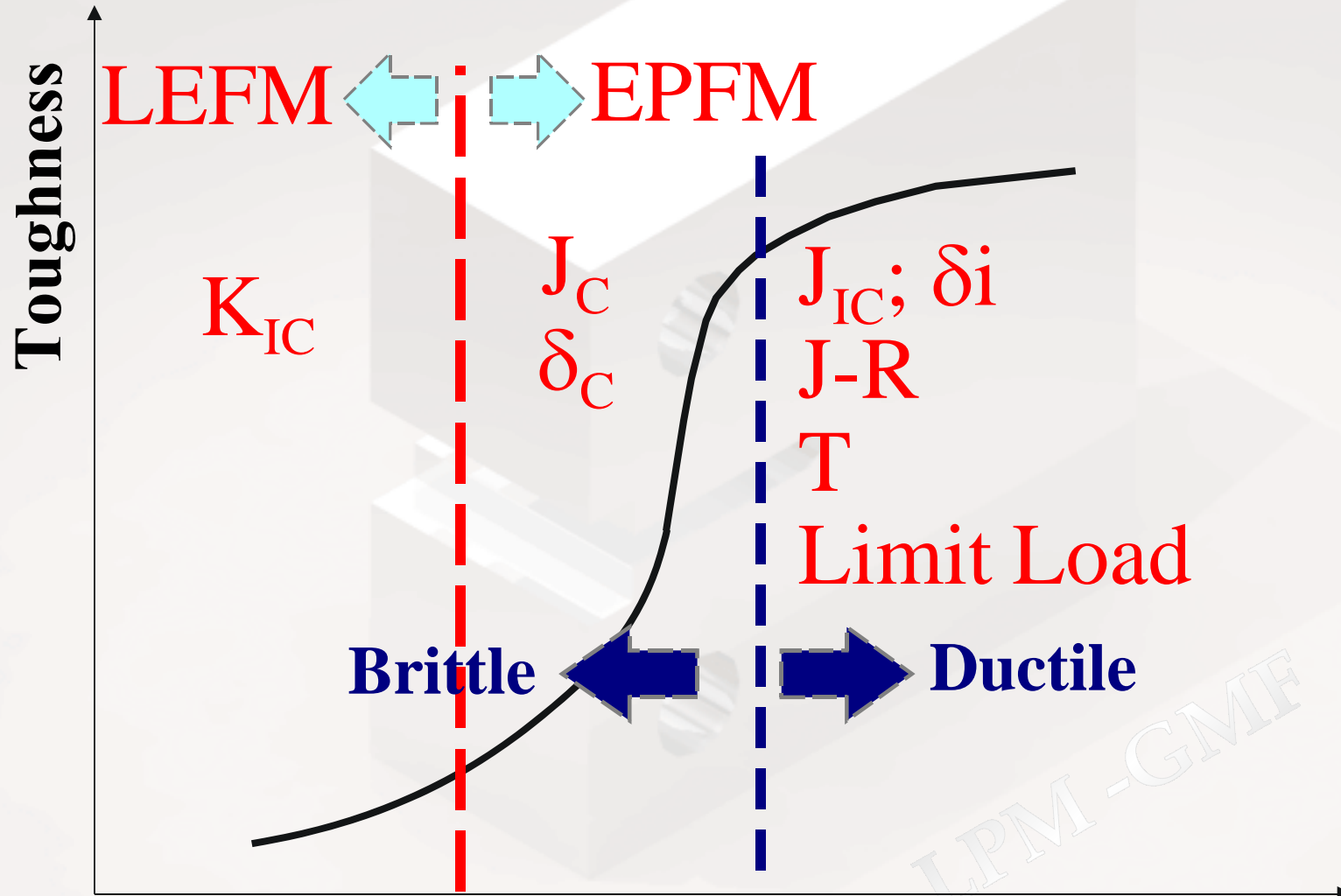
Transición dúctil frágil

LPM -GMF

Transición de Diferentes Materiales

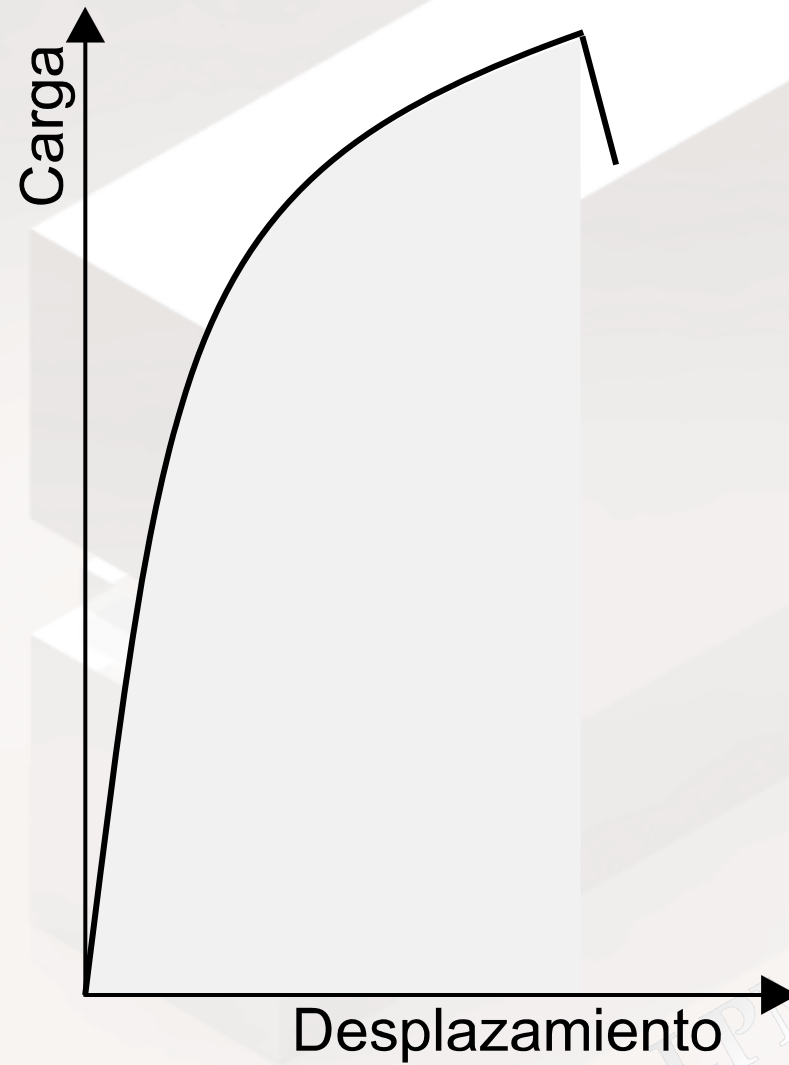


Parámetros de Fractura



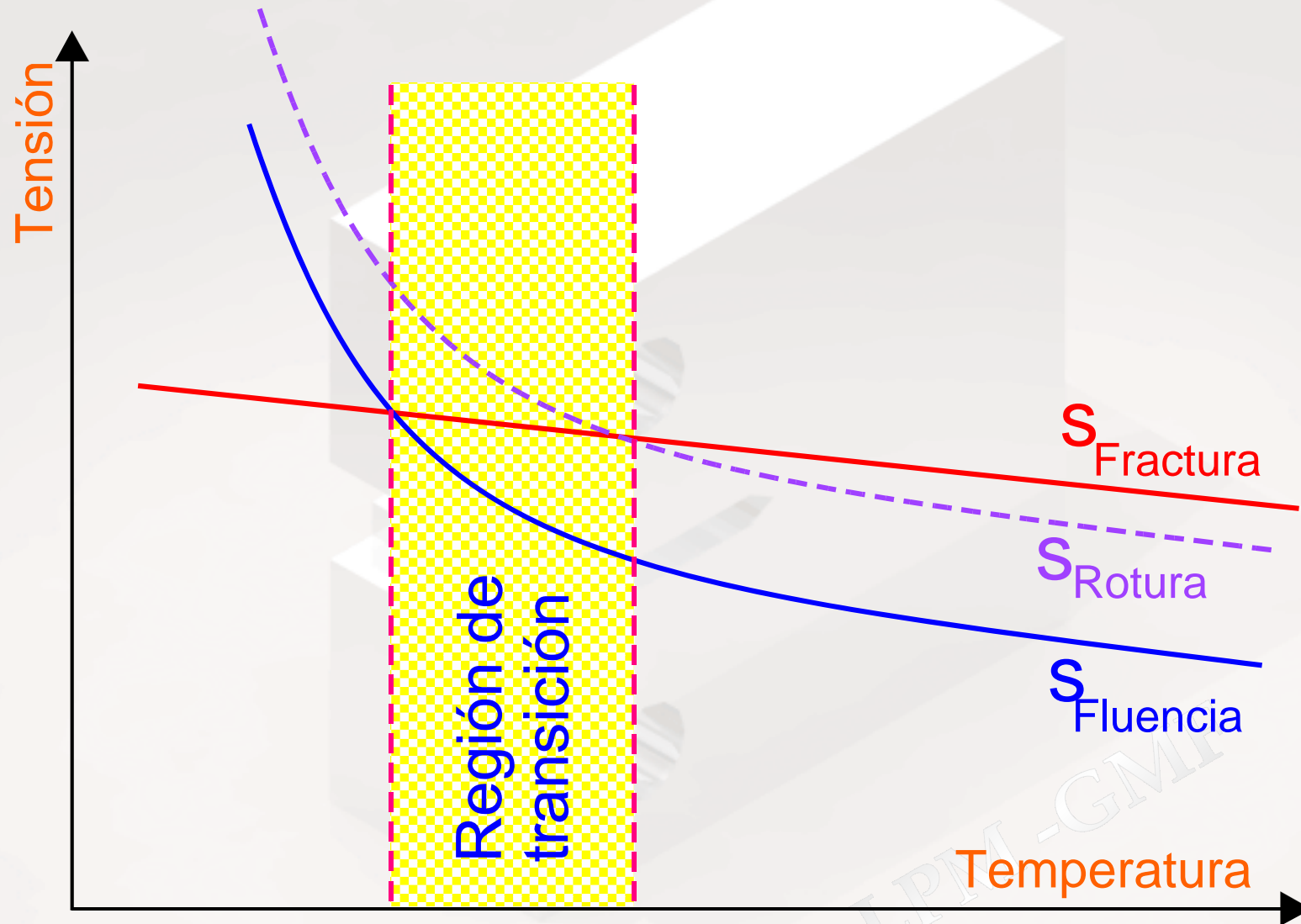
LPM -GMF

Registro P vs. V

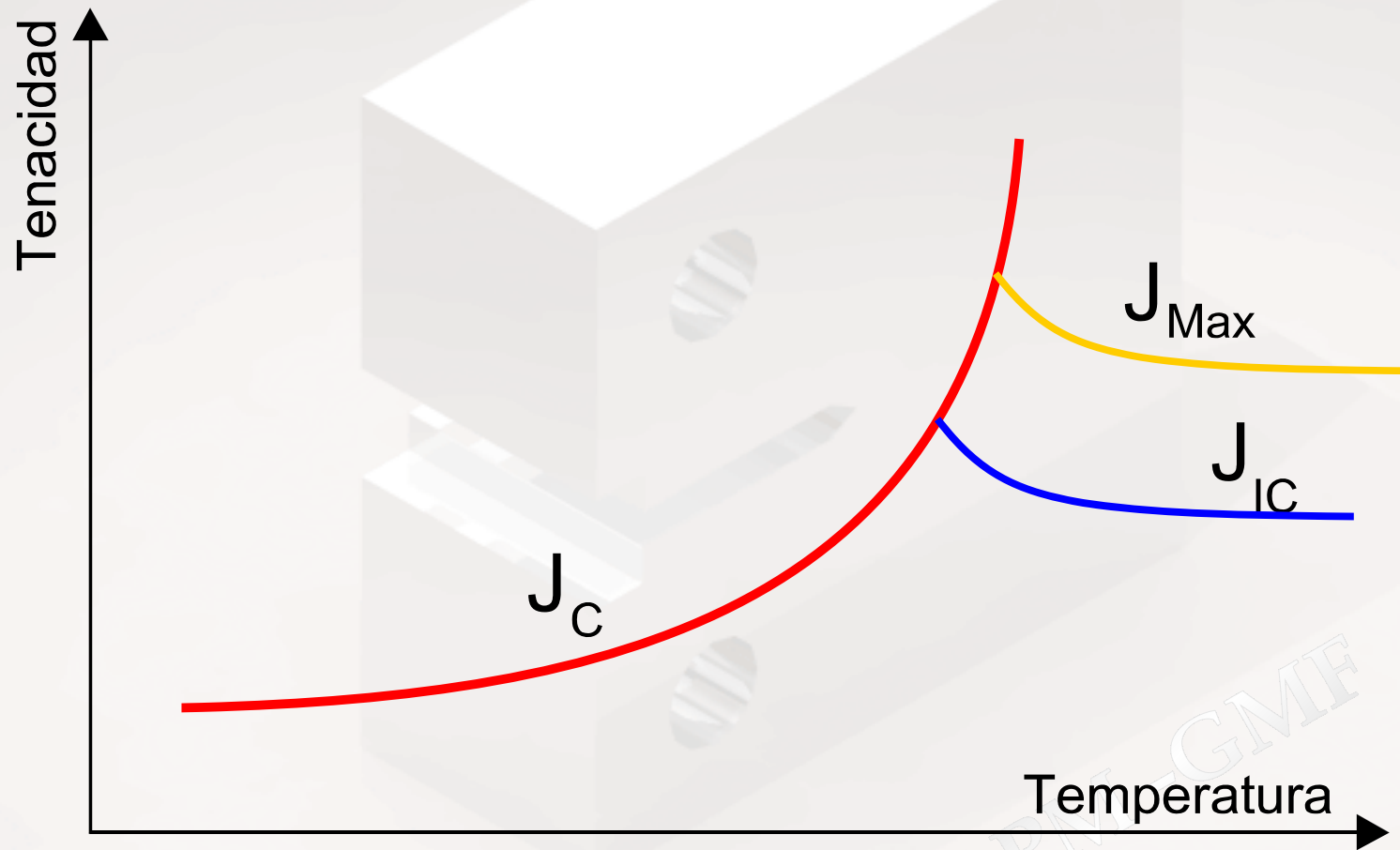


LPM - GMF

Competencia de Mecanismos

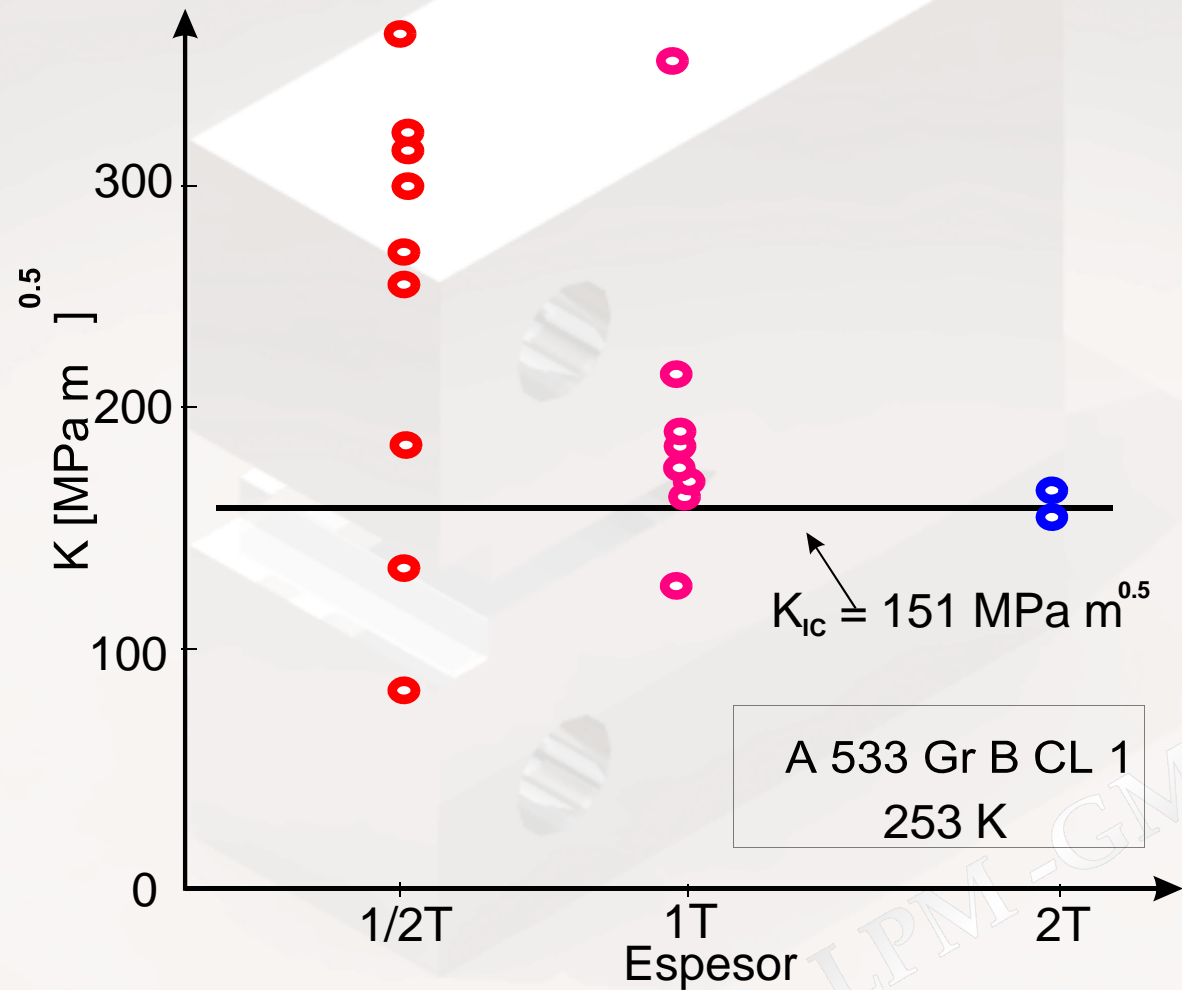


Mecanismos Intervinientes

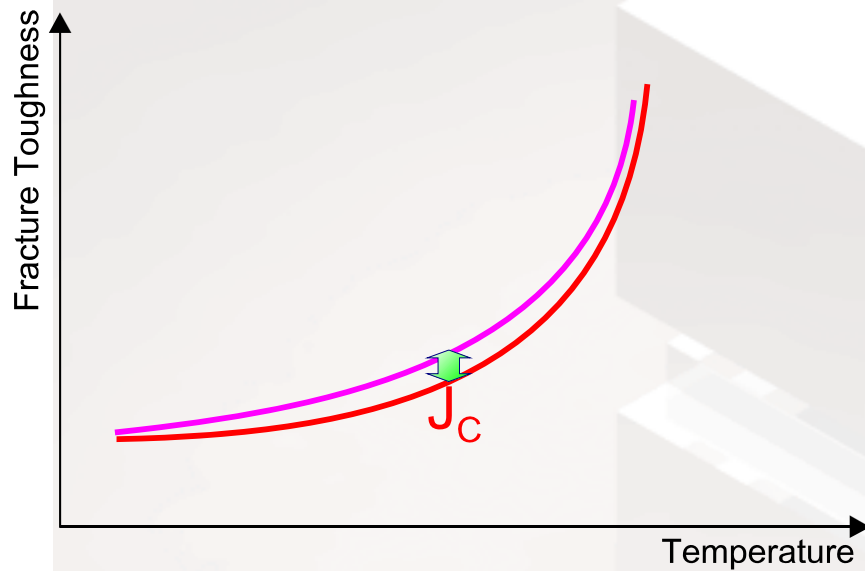


Dispersión de Resultados

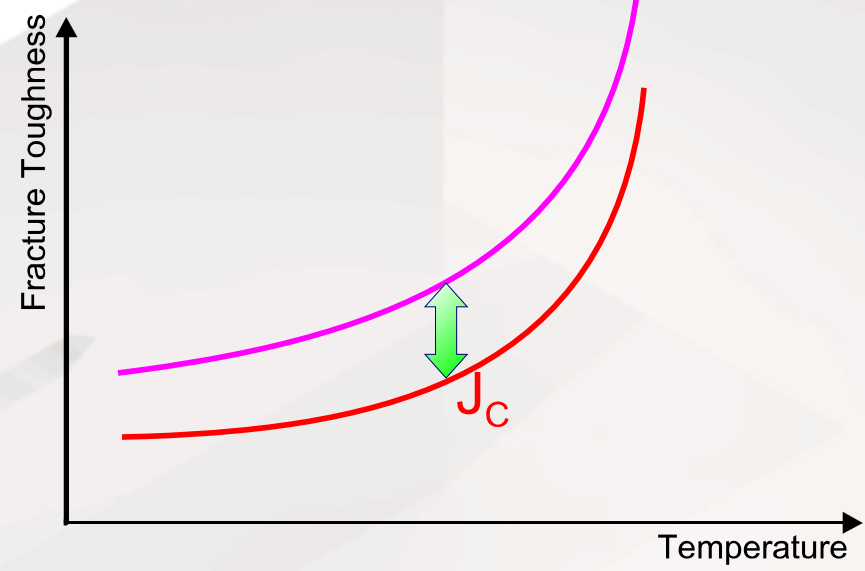
Teoría Estadística



Efecto de Tamaño



Probetas grandes



Probetas pequeñas

LPM-GMT

Función de Weibull de 2 parámetros

$$\left[1 - F_1(J)\right] = e^{-\left(\frac{J}{c}\right)^b}$$

$$\left[1 - F_N(J)\right] = e^{-N\left(\frac{J}{c}\right)^b}$$

Función de Weibull de 3 parámetros

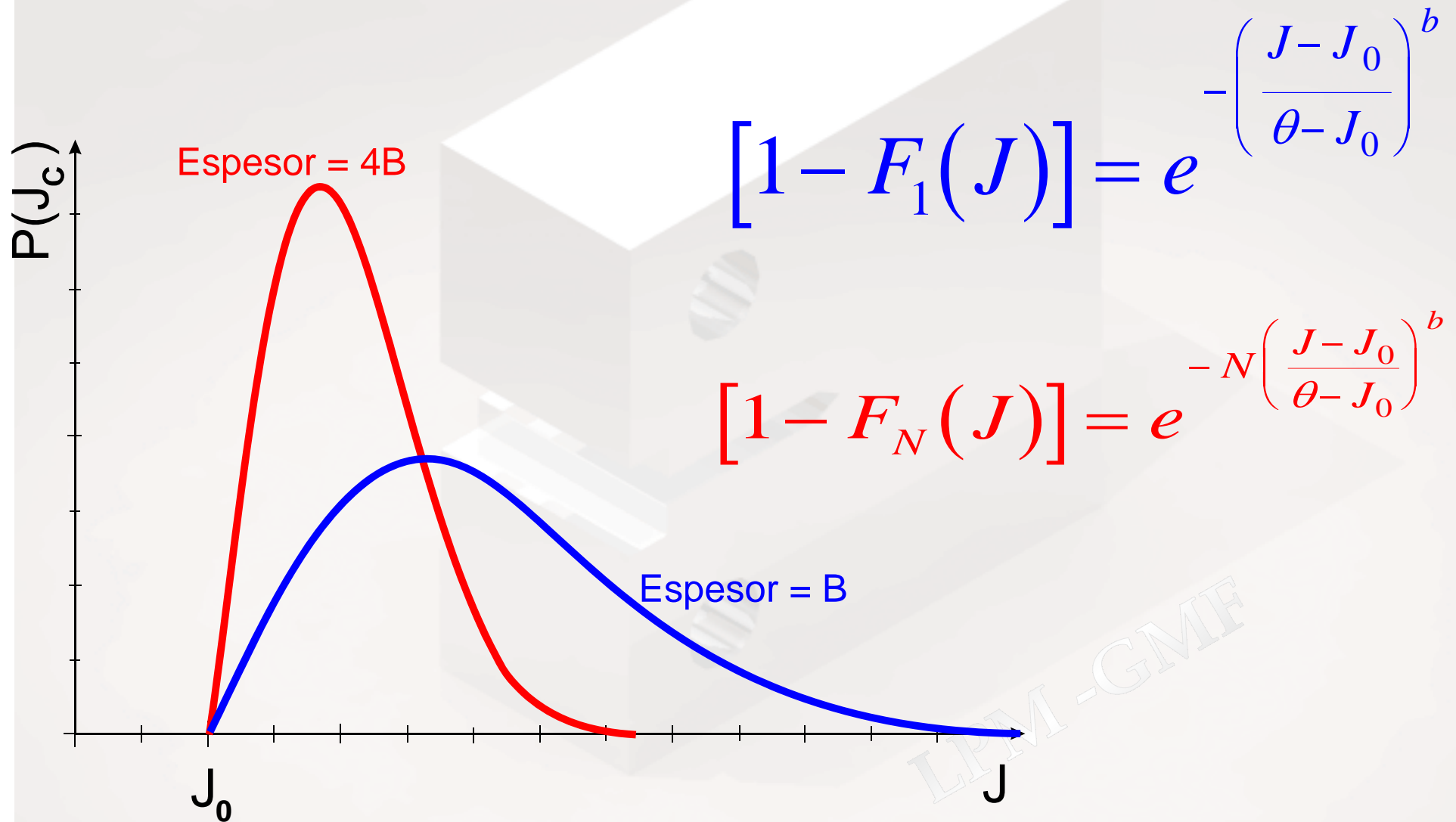
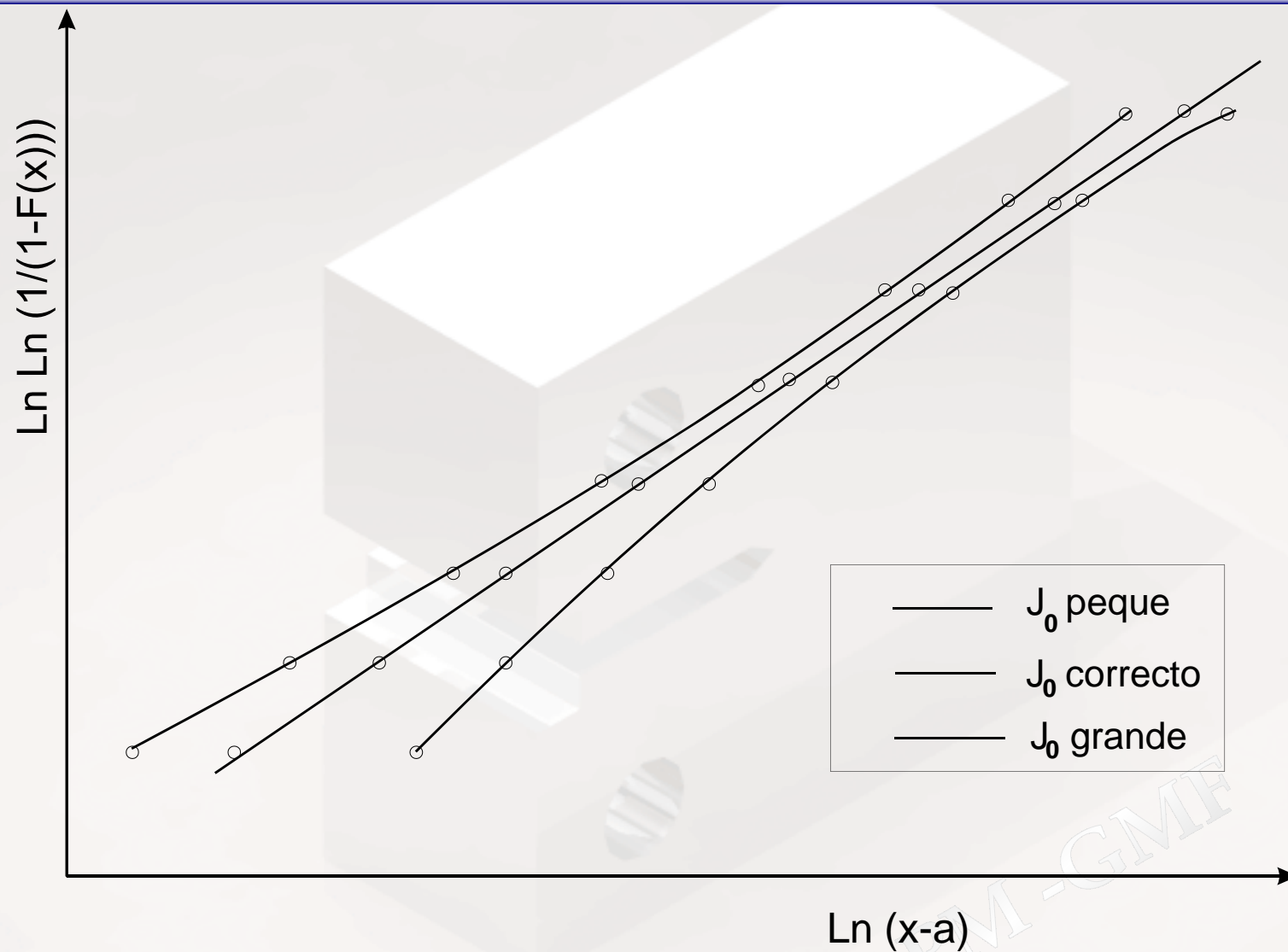
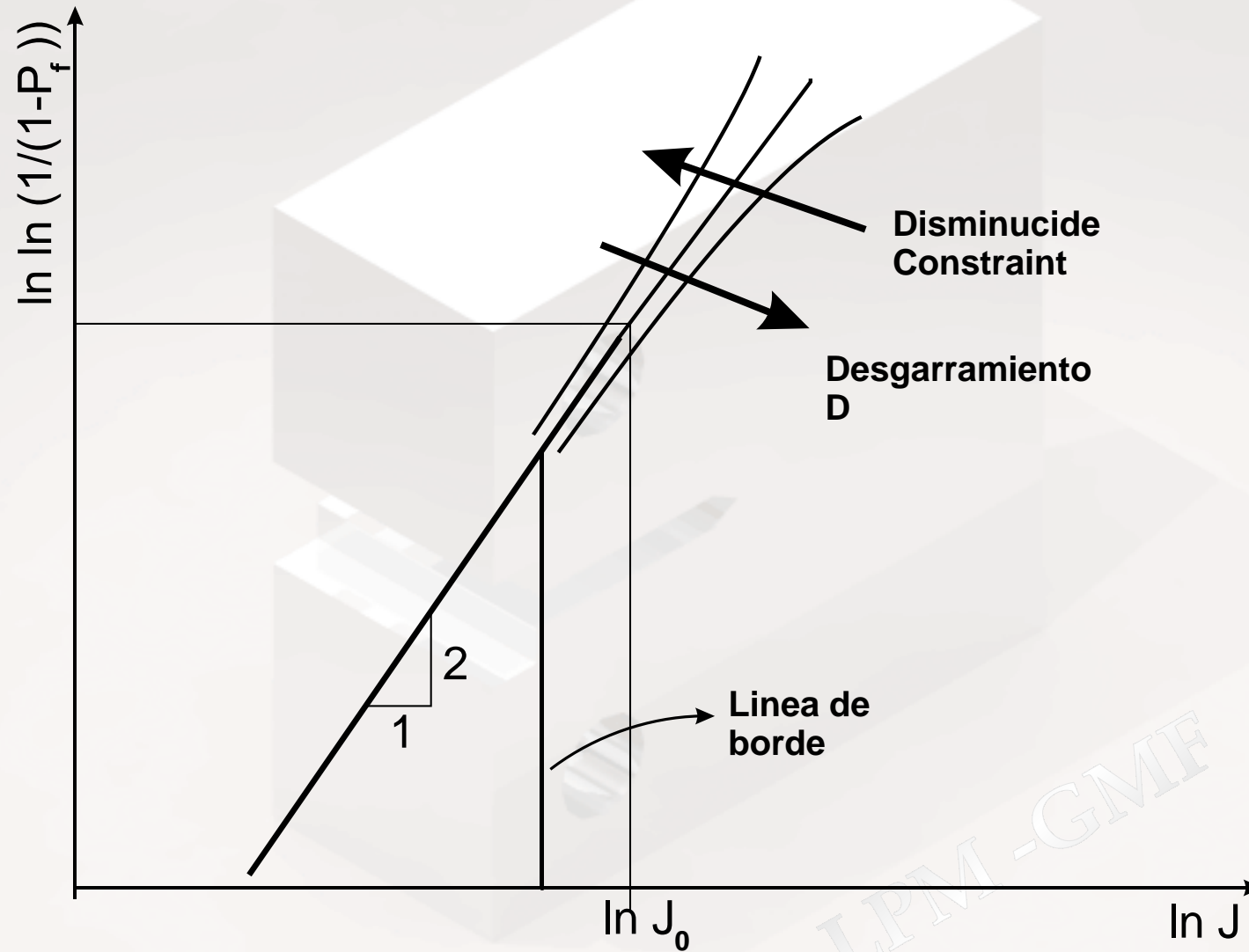


Gráfico de Weibull

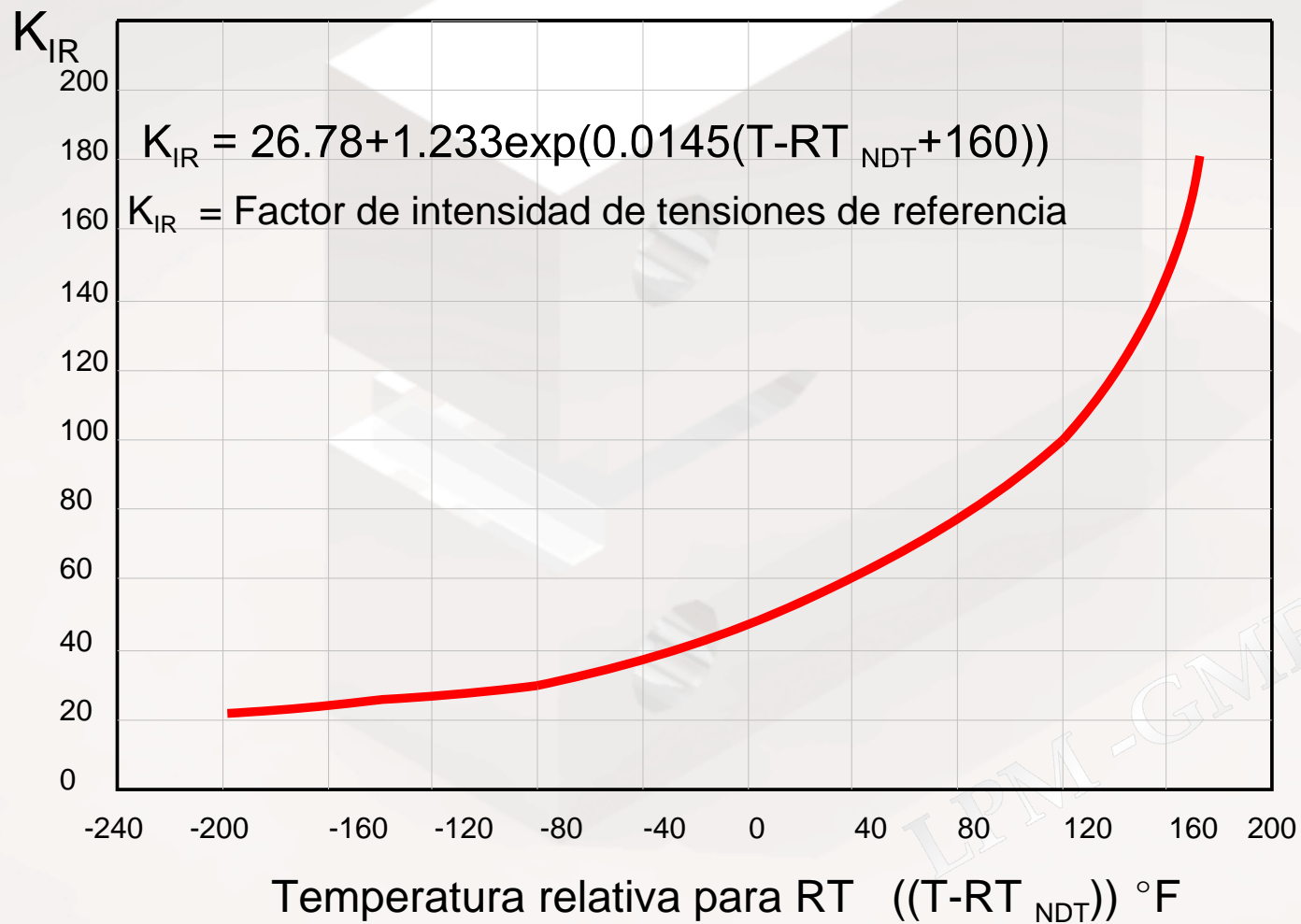


Límites



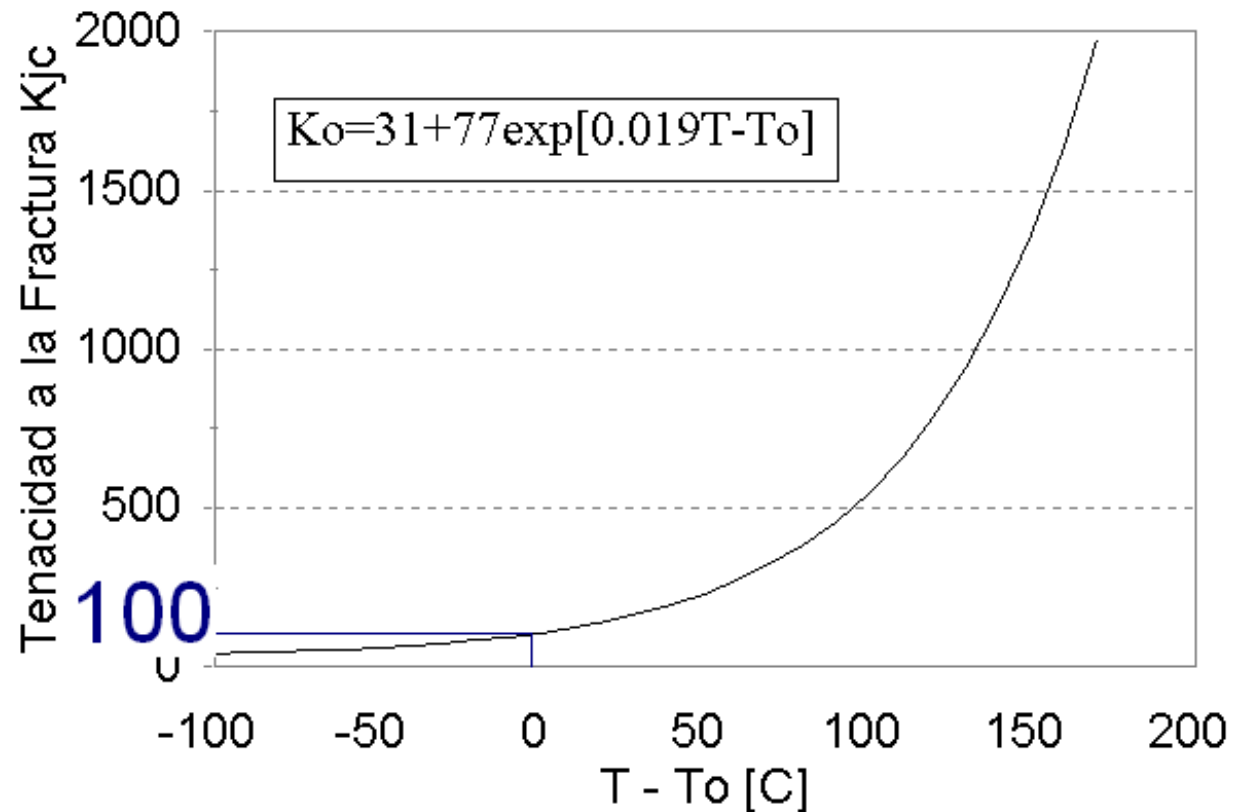
LPM -GMF

ASME Boiler and Pressure Vessel Code. Section III Appendix G



Master Curve de Wallin

Método de ASTM



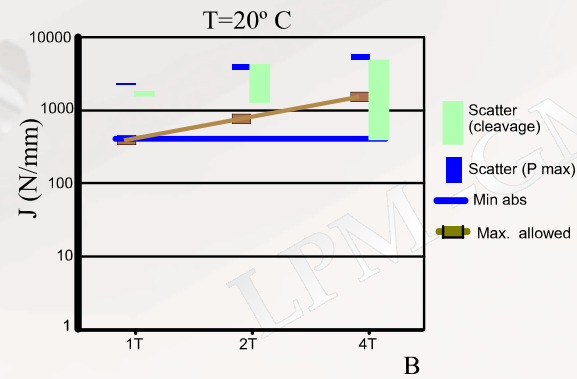
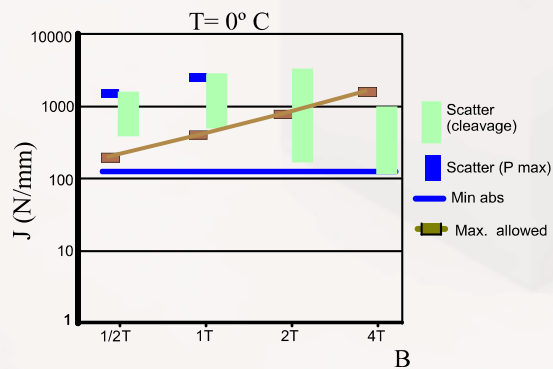
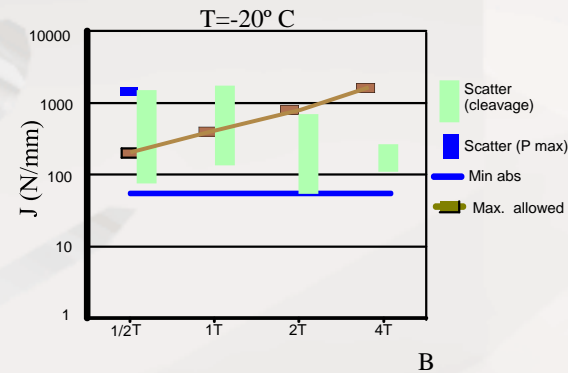
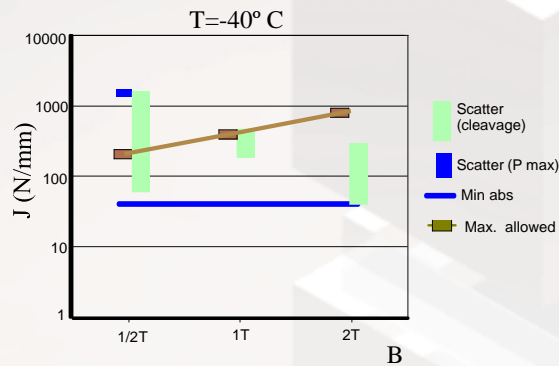
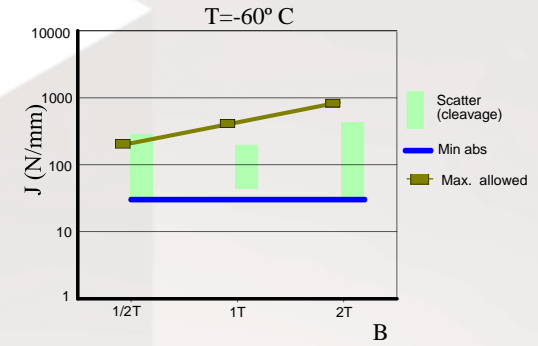
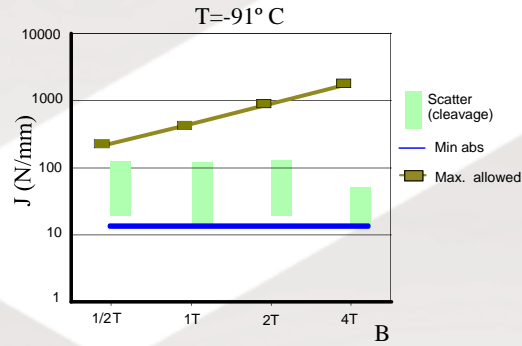
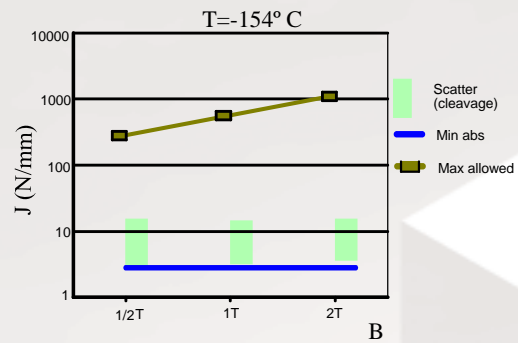
Valor medio
de tenacidad

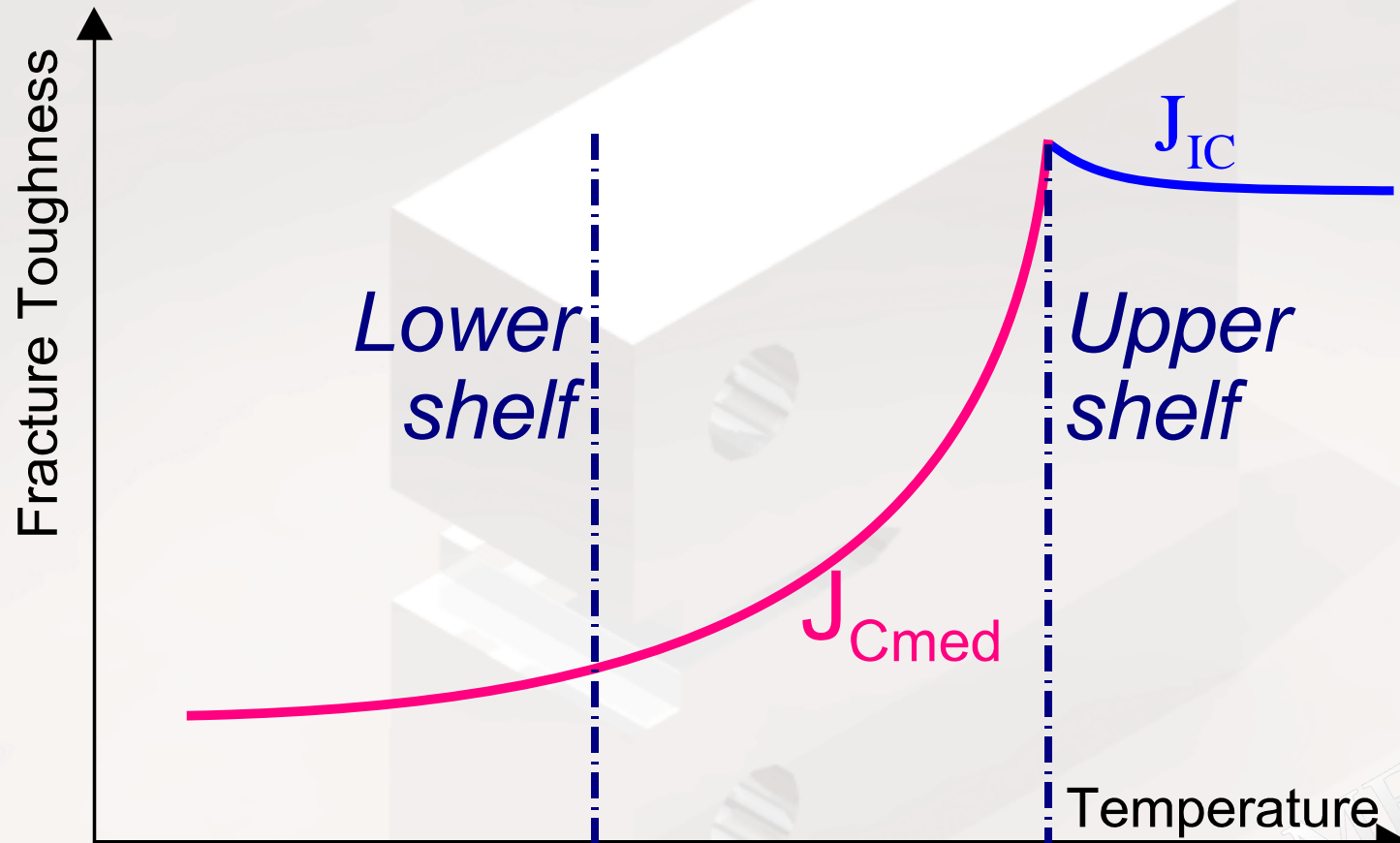
B=1"!!!

ESIS Round Robin (2002)

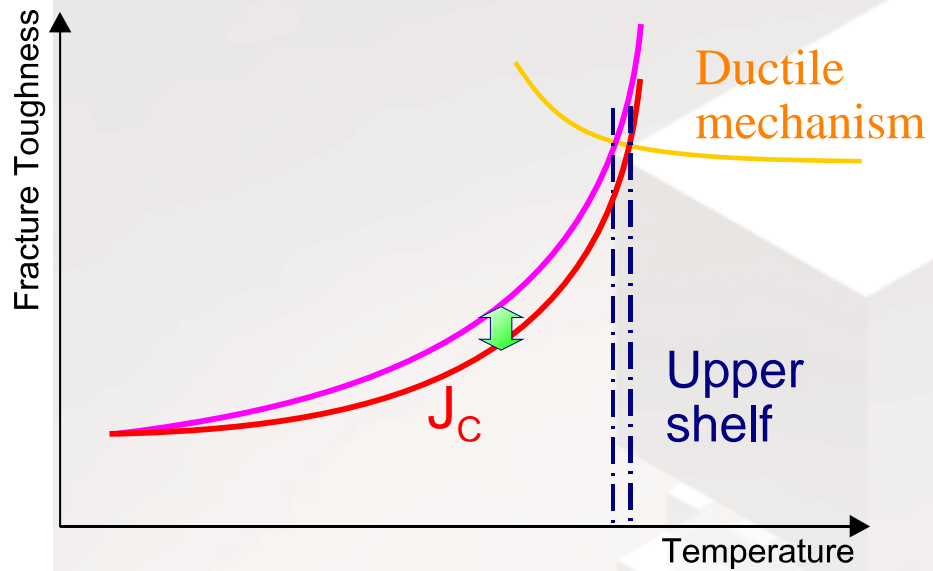
Data set	T (°C)	Size	Number of tests
1	-154	1/2 T	31
2		1 T	34
3		2 T	30
4	-91	1/2 T	31
5		1 T	34
6		2 T	30
7		4 T	15
8	-60	1/2 T	31
9		1 T	34
10		2 T	30
11	-40	1/2 T	30
12		1 T	32
13		2 T	30
14	-20	1/2 T	31
15		1 T	30
16		2 T	30
17		4 T	15
18	0	1/2 T	30
19		1 T	30
20		2 T	30
21		4 T	16
22	20	1 T	10
23		2 T	30
24		4 T	15

ESIS Round Robin

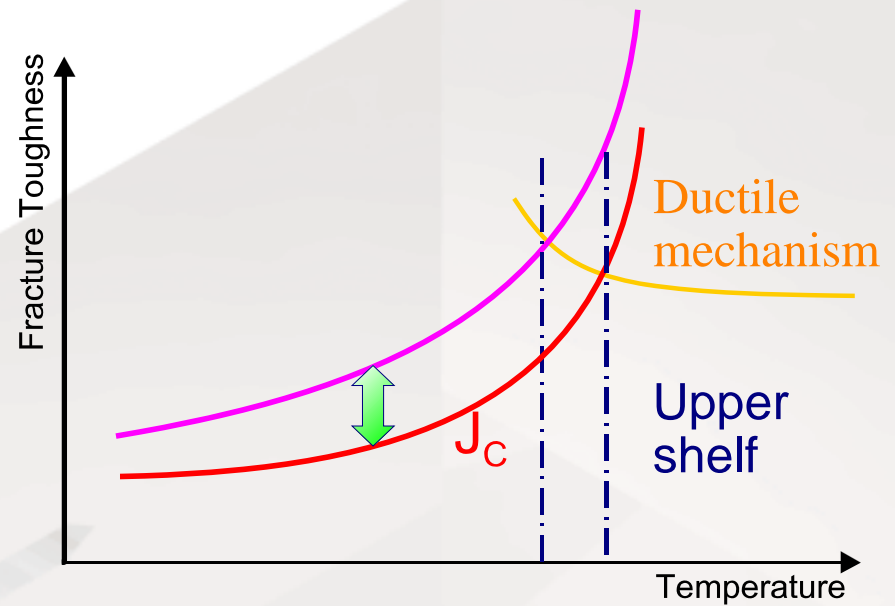




LPM - GIVE

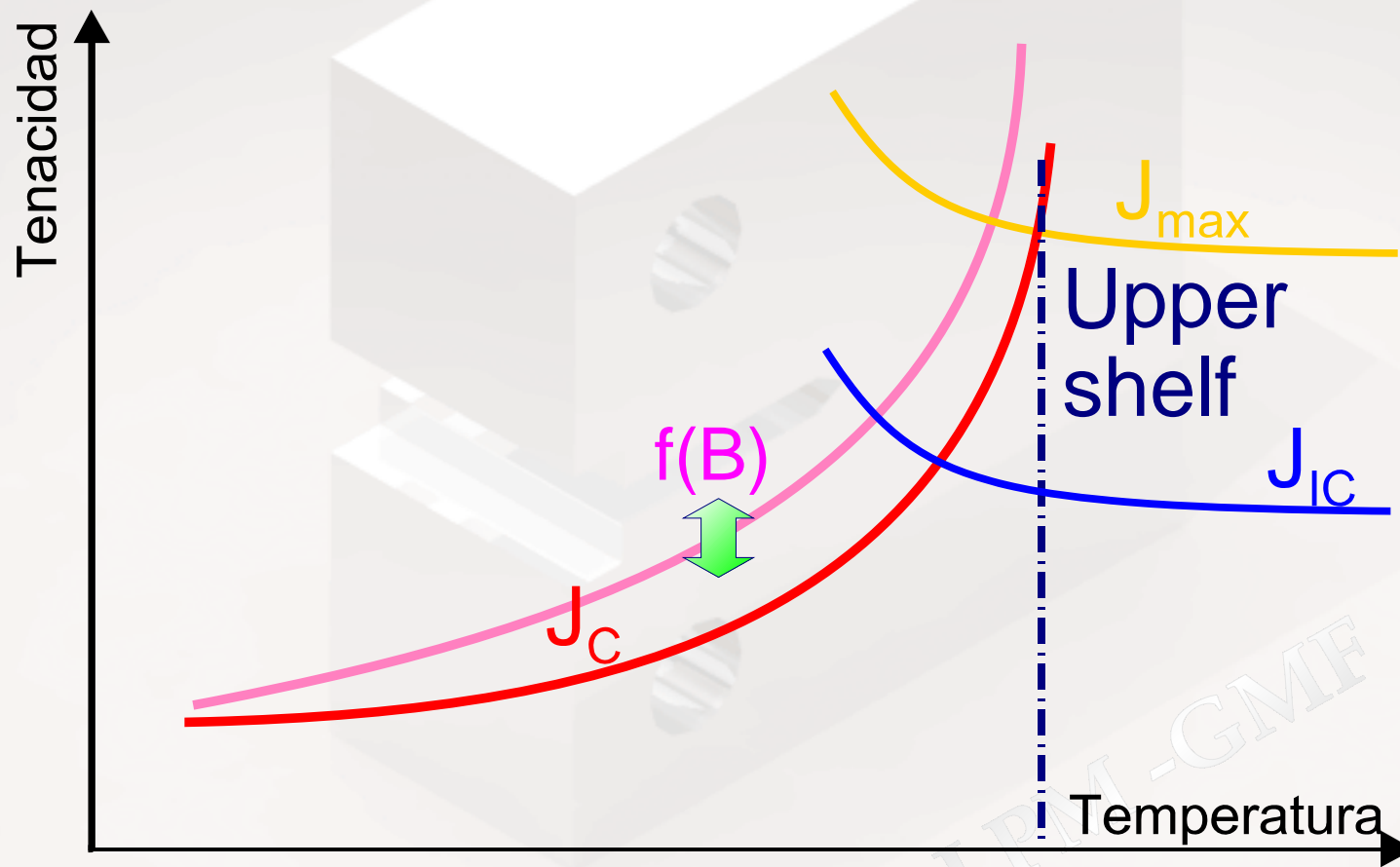


Probetas grandes



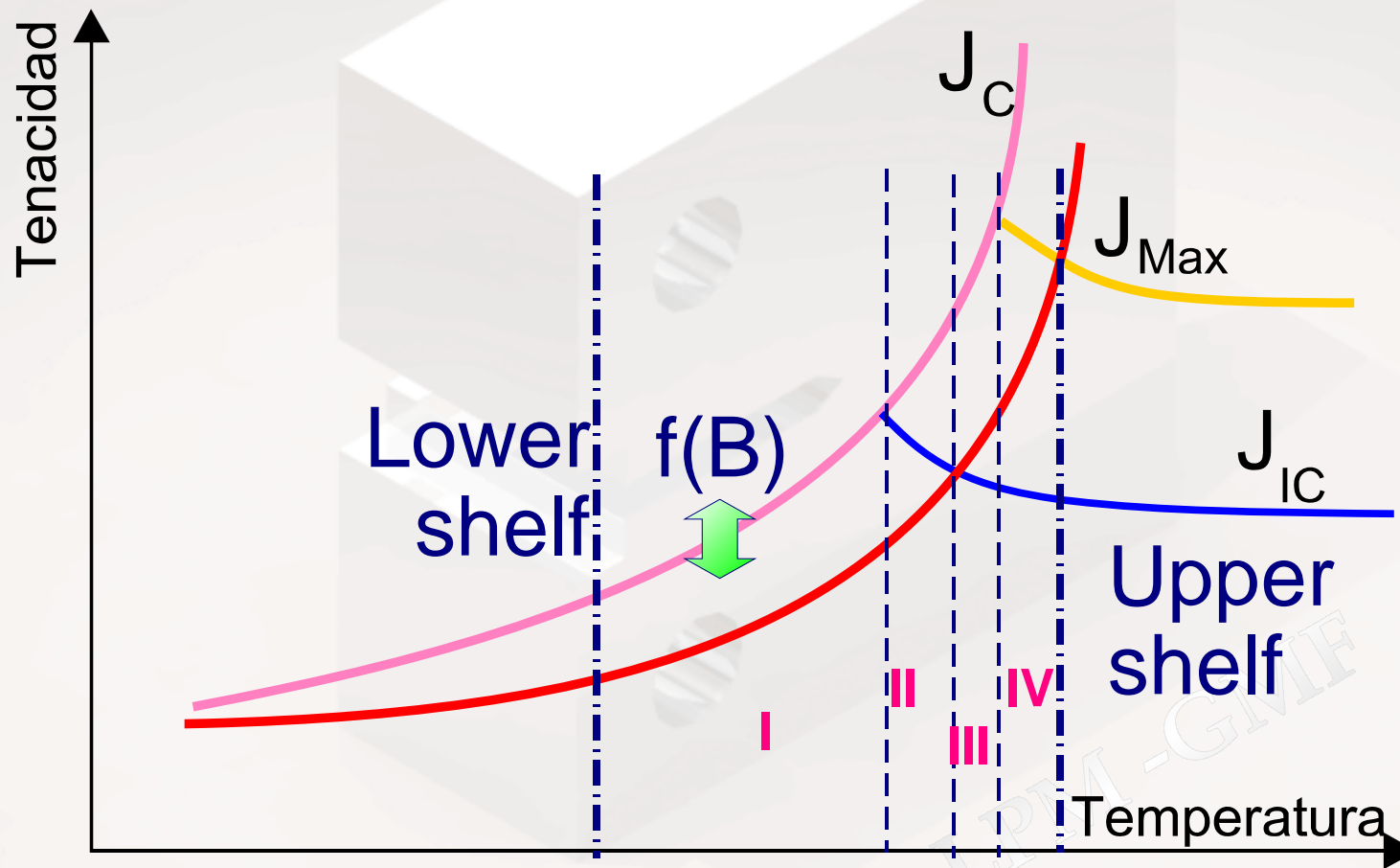
Probetas pequeñas

LPM -GMF

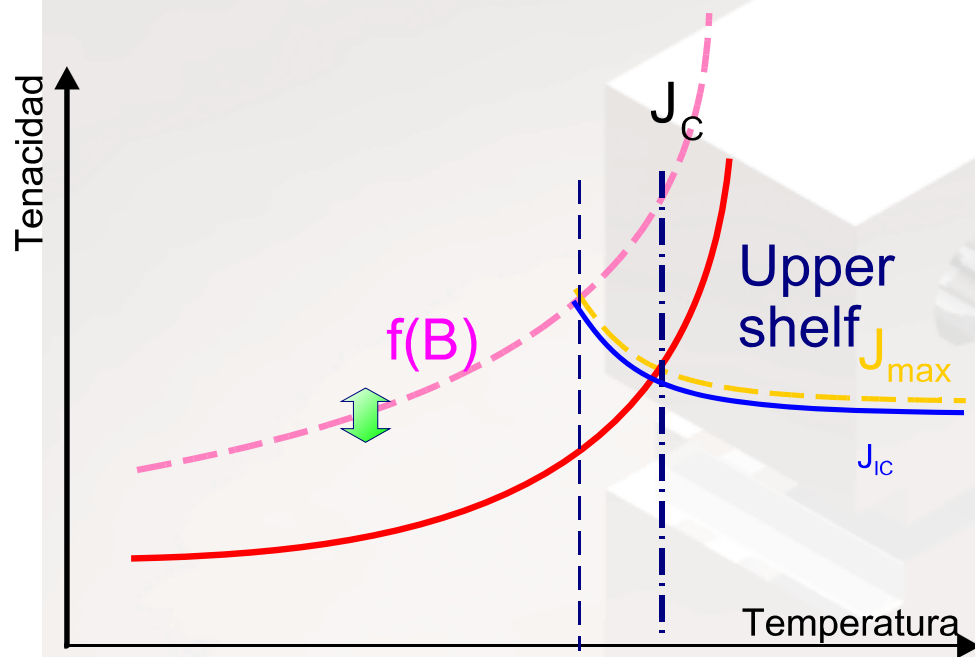


LPM-GMF

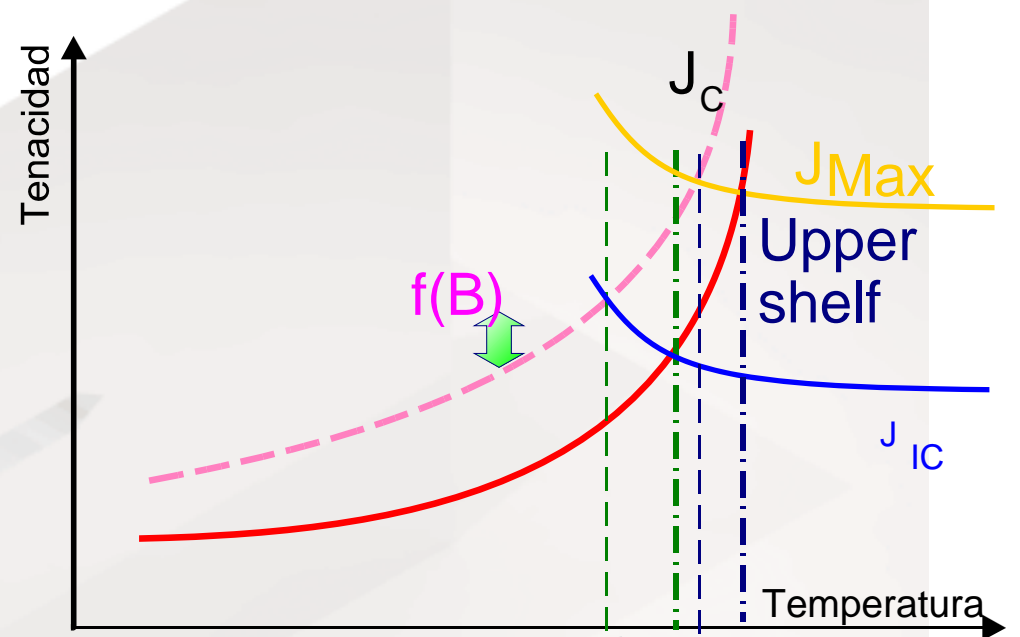
Subregiones en la curva de transición



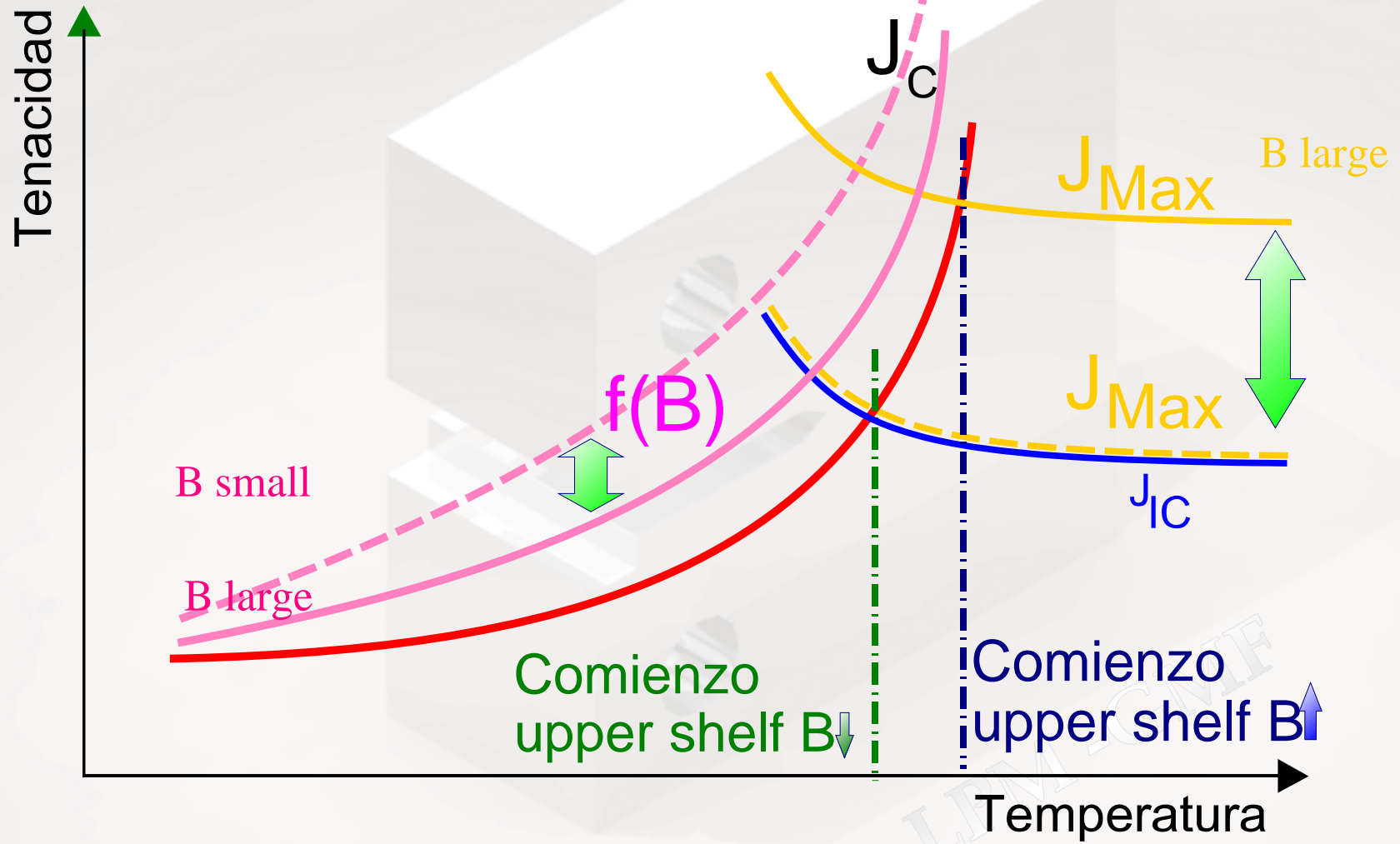
Probetas pequeñas

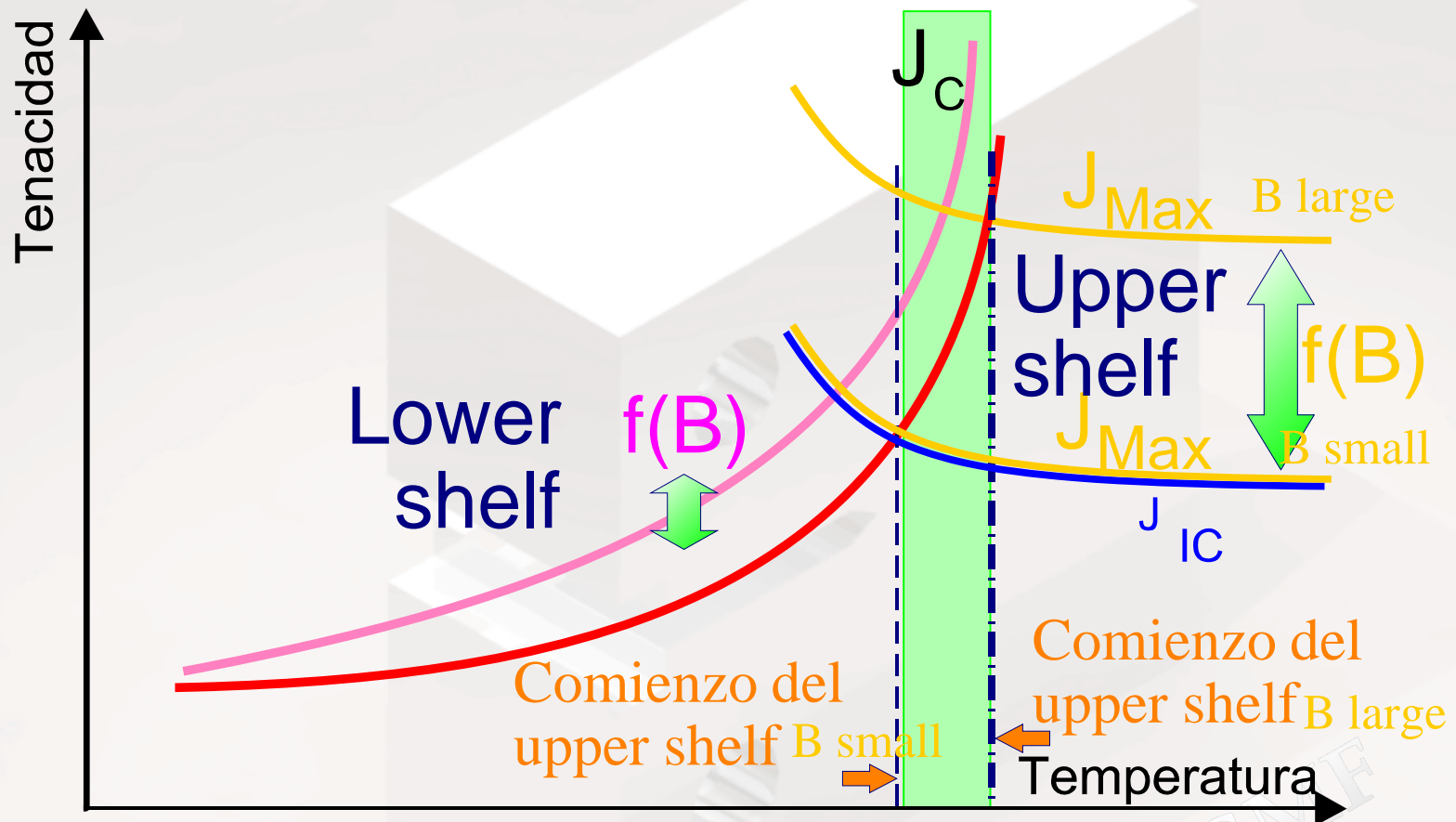


Probetas grandes



LPM -GMF





LPM - GME

Resumen y Conclusiones

- El modelo Weakest Link falla al describir la dispersión en el tercio superior de la transición.
- Se pueden identificar cuatro sub regiones.
- En las sub regiones III y IV la dispersión disminuye al aumentar la temperatura.
- La dispersión también se reduce al disminuir el tamaño.
- El límite entre la transición y el upper shelf es dependiente del tamaño.