
INTERNATIONAL SUSTAINABLE PAVEMENTS WORKSHOP

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Pavements providing low rolling resistance

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Rolling resistance contribution to more sustainable pavements and pavement policy

Rolling resistance (RR) is a major contribution to energy losses in a running vehicle (10 % change in RR creates about 1-2.5 % in fuel consumption)

Reducing RR will reduce CO₂ emissions and thus be an important way to reduce climate change

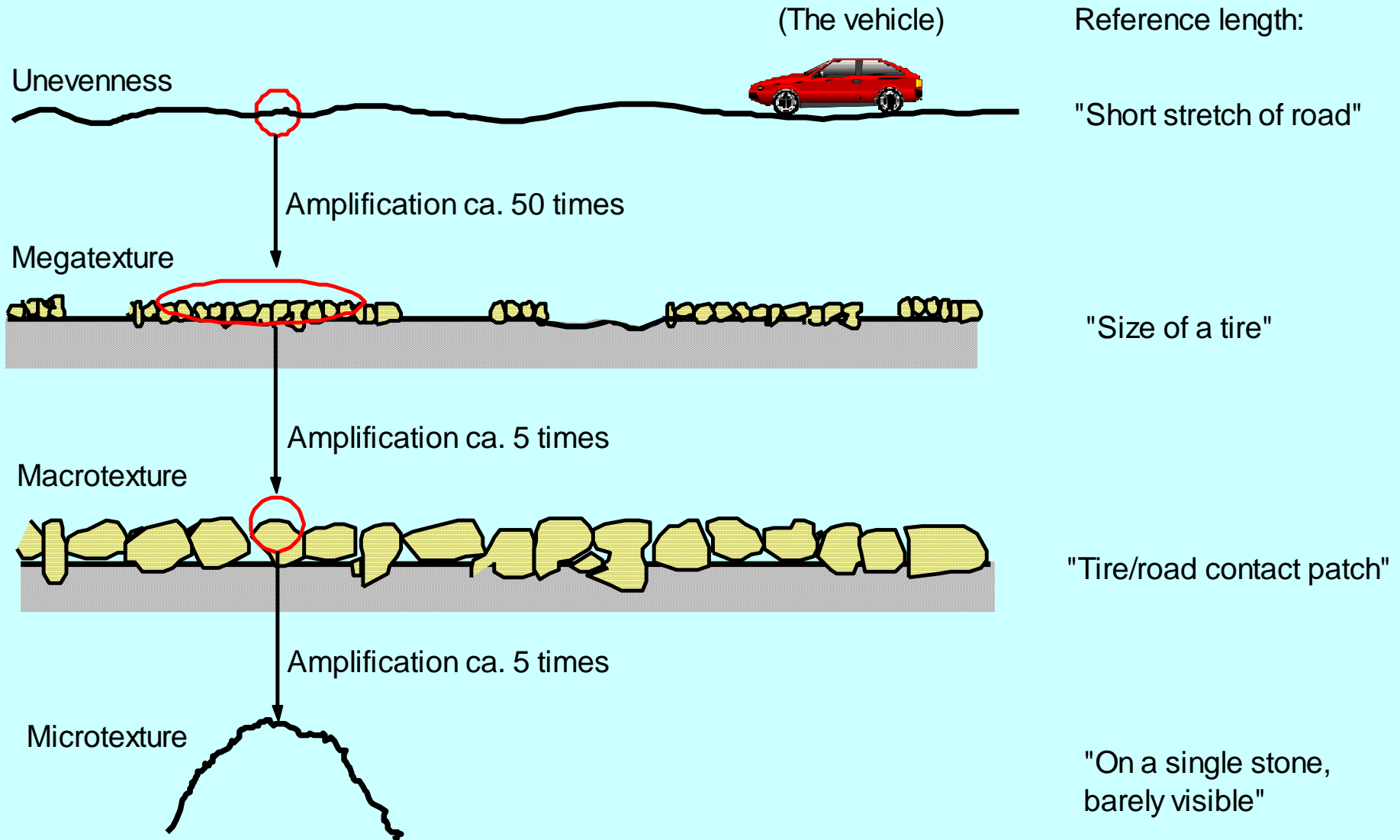
Pavement texture and unevenness has a substantial influence on RR

Pavement texture and unevenness are far from "ideal" in many countries

Poor pavement maintenance is a major contributor to excessive RR

Worst pavements may give 100 % higher RR than the best ones

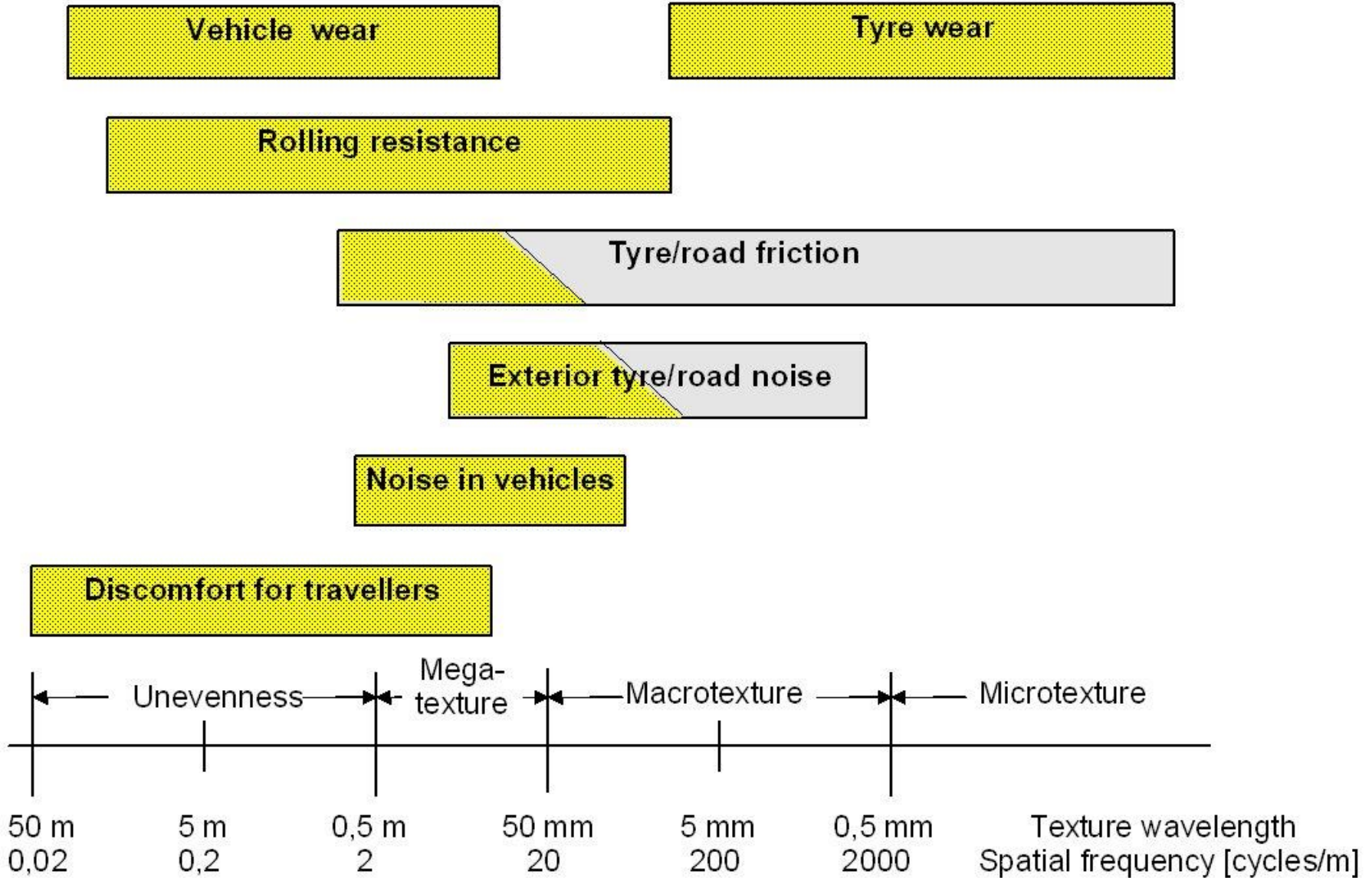
The "wavelength ranges" of a surface



Texture influence on various parameters

(Yellow is unwanted, grey is wanted)

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State-of-the-Art and Practice

US

Seminar/workshop by ASTM in 1988 in State College, PA: RR research presented

Some studies of RR of PCC vs asphalt pavements, but not scientifically convincing

FHWA RNS on RR to be presented at TRB 2010 (AFD90)

Poor pavement maintenance is a major problem to RR

Europe

Limited research since the 1980's

Recently "re-discovered" problem

Research initiated

Some countries use very rough-textured pavements giving very high RR

Some authorities have started to consider RR when selecting pavement type

Some knowledge gaps

Definition

General RR of pavements

Relative influence of unevenness, megatexture and texture

Stiffness influence (PCC vs asphalt)

Measurement methods

Measurement equipment

Reference tire(s)

Research issues with high impact potential

European project MIRIAM

with participation of Univ of California in Davis

More to be supplemented