GIS a DPZ v geologii

spektrální příznaky/spektrální stratigrafie

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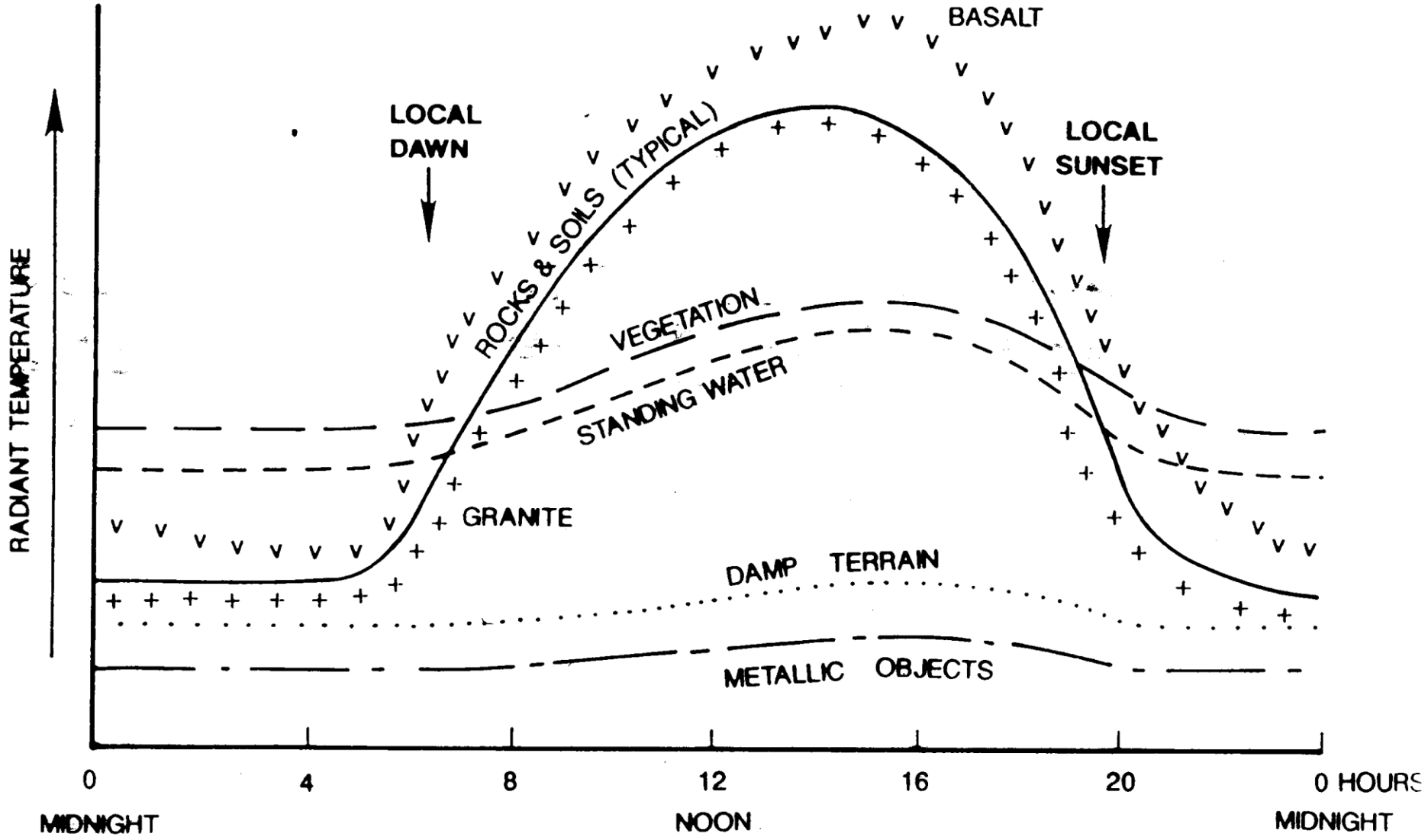


Figure 3.7 Schematic diagram of daily radiant temperature curves for some common materials. From Sabins [12]. Copyright 1987 by Remote Sensing Enterprises, INC. Used with permission of W.H. Freeman and Company.

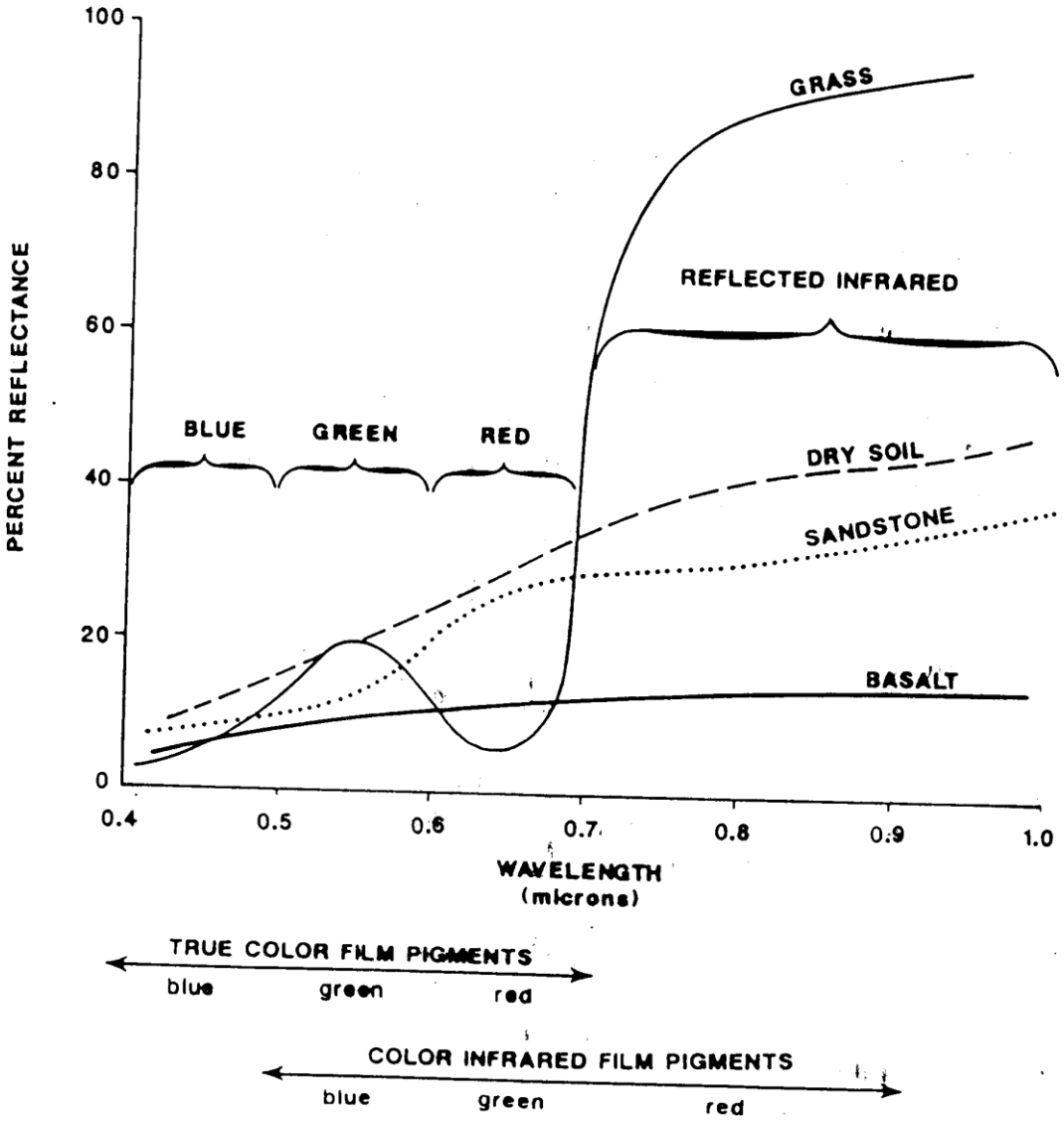
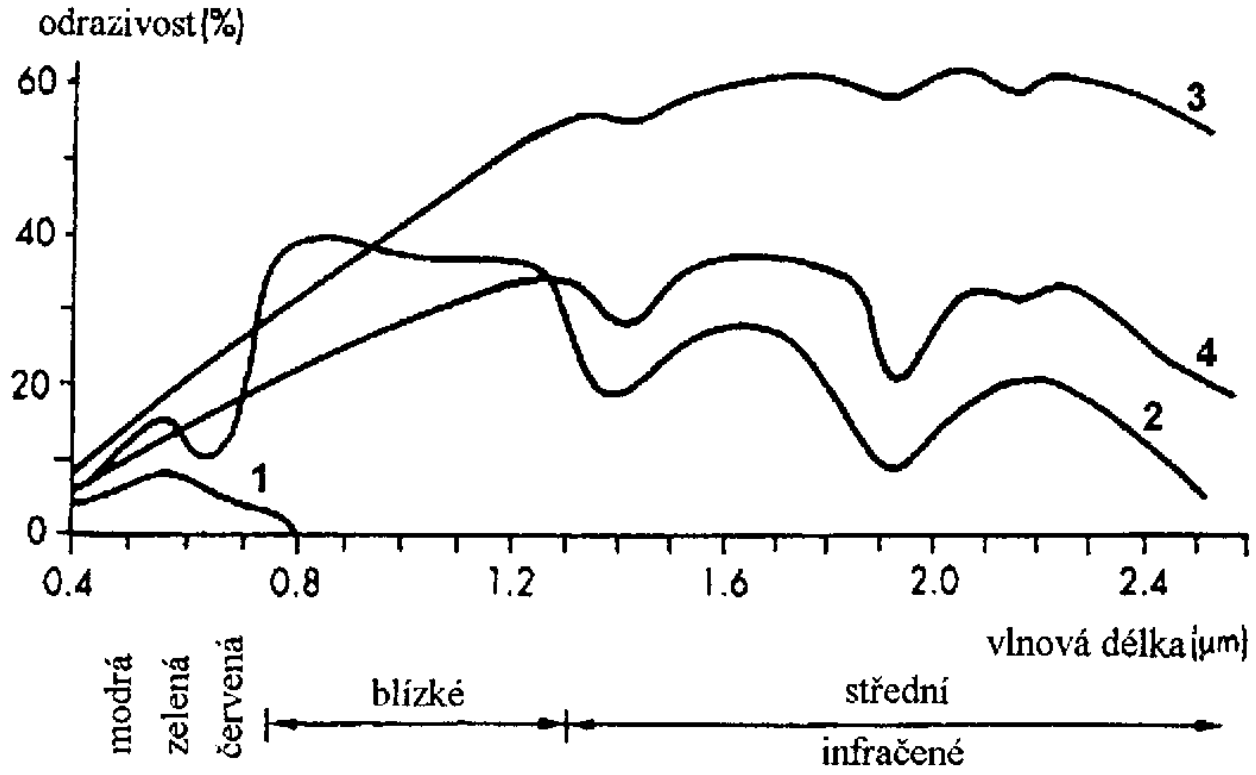
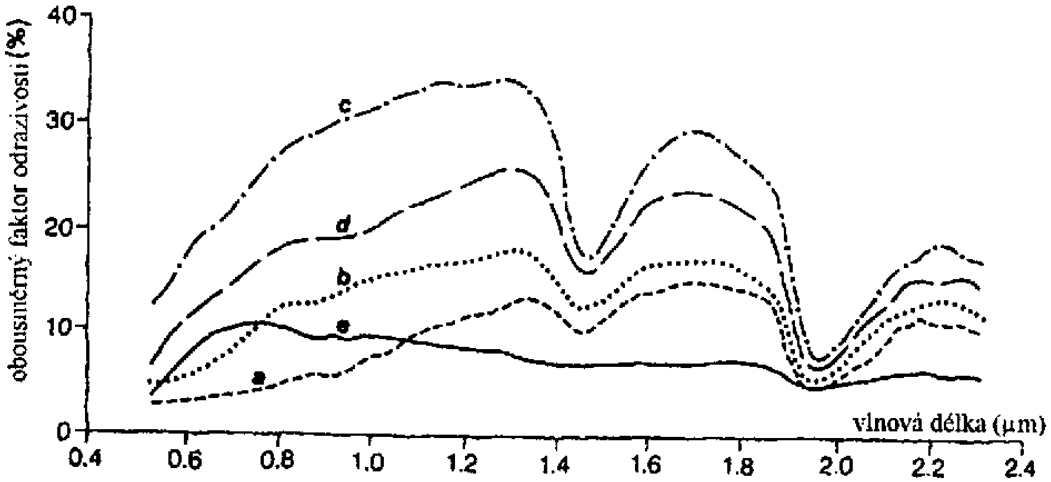


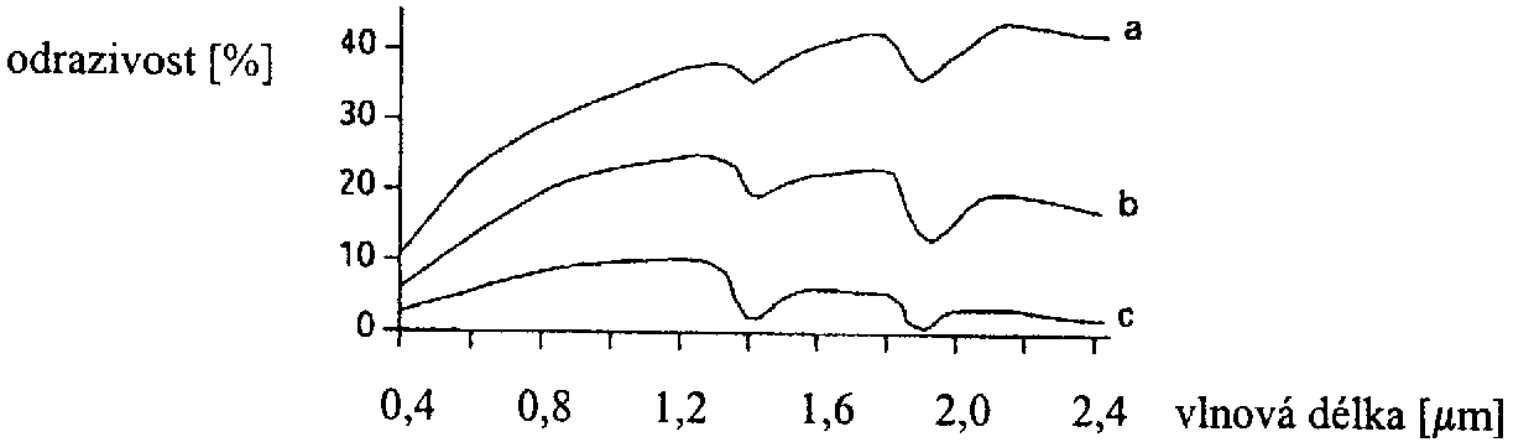
Figure 3.4 Comparison of color and color infrared film pigments and reflectance curves of some typical surface materials. From Condit [3], Moran [4], and Goetz [5].



Obr. 4-1. Obecný průběh spektrální odrazivosti vody (1), vegetace (2), suché půdy (3) a vlhké půdy (4)



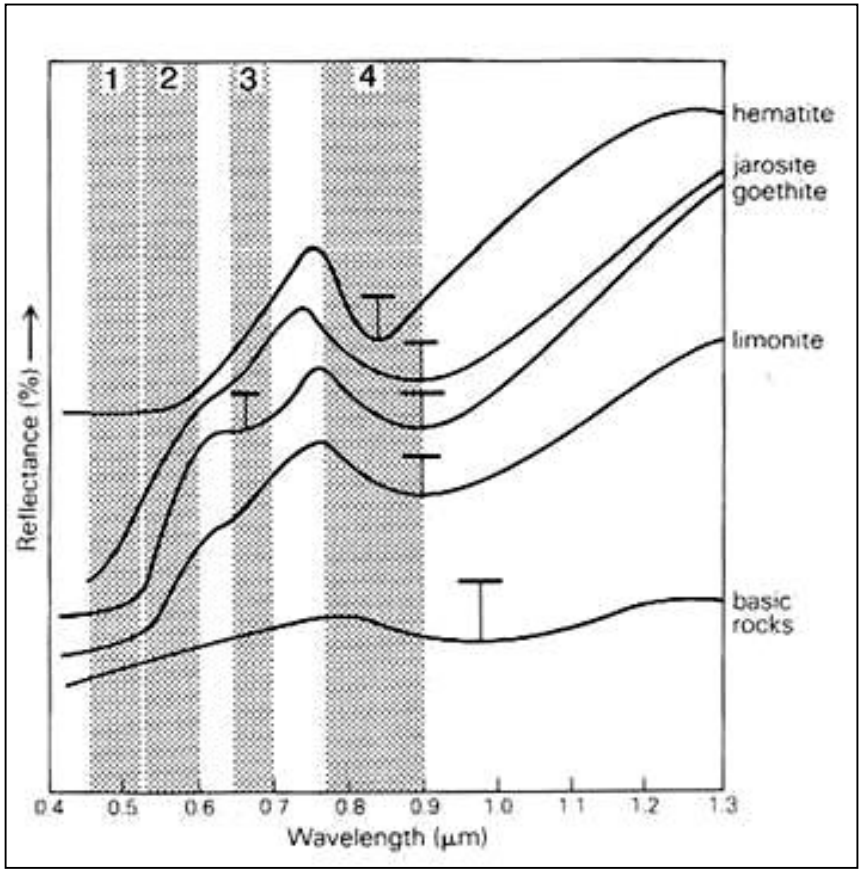
Obr.4-8. Spektrální odrazivost půd s různým obsahem humusu a železa: (a) s vysokým obsahem humusu, (b) s nízkým obsahem humusu, (c) bez příměsí, (d) s nízkým a (e) vysokým obsahem železa

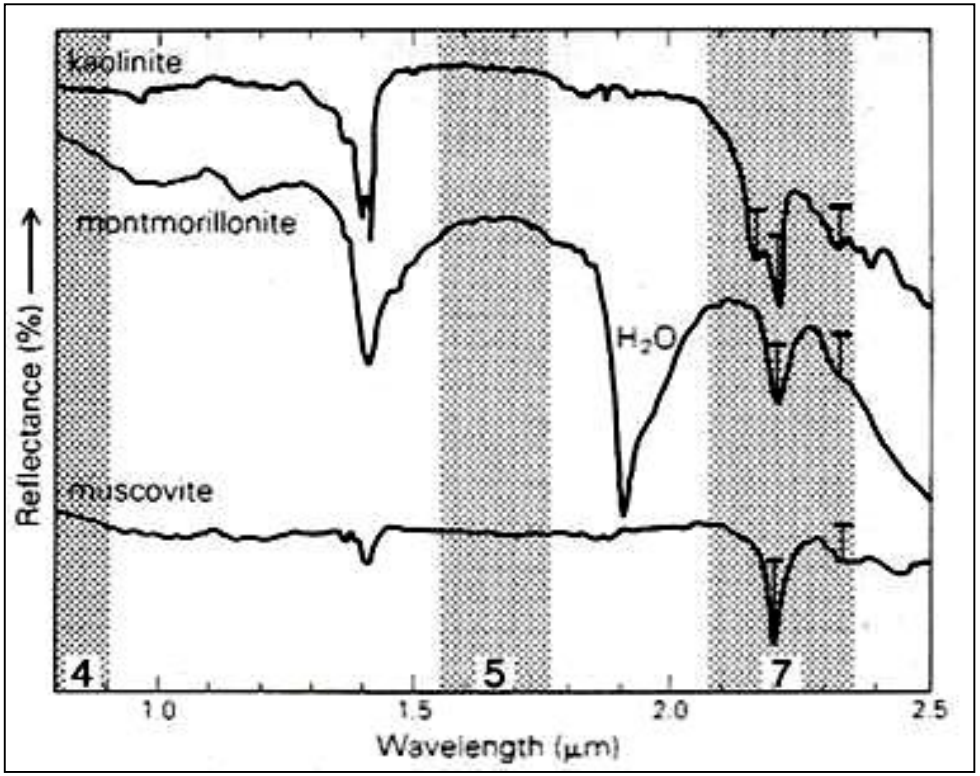


Obr.4-9. Vliv obsahu vlhkosti w na odrazivost půdy: a) w = 5%, b) w = 20 %. c) w = 40 %

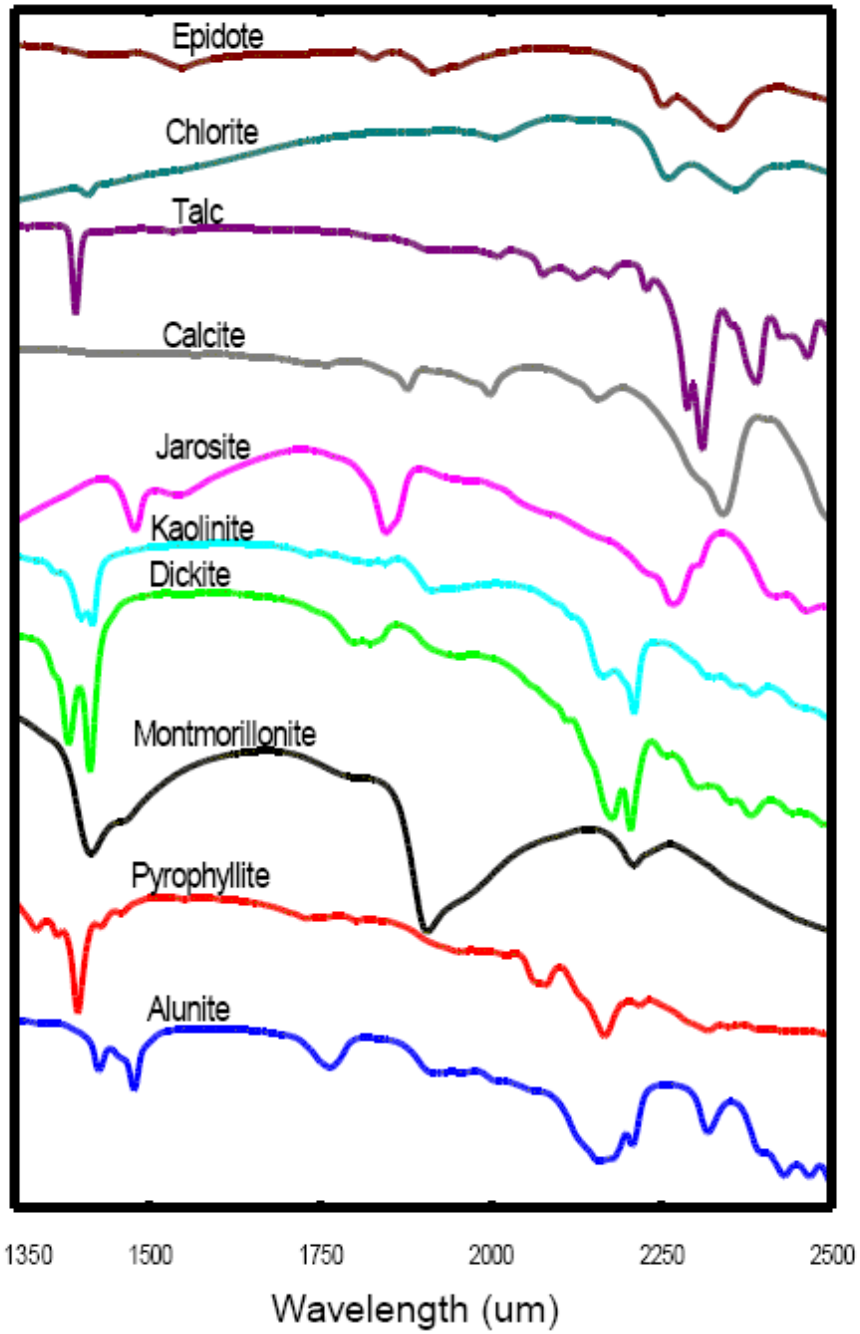
Spektrální charakteristiky minerálů a hornin - Landsat 7 ETM+

- Fe – efekty krystalového pole VNIR
- Fe-O – přenos náboje pod 0,55 μm
- OH^- skupina – hlavní absorbční pás kolem 2,7 μm
- Al-OH, Mg-OH 2,3 a 2,2 μm
- C-O absorbční pásy kolem 2,3 μm





Examples of Minerals with SWIR Absorption Bands (1.3 - 2.5um)



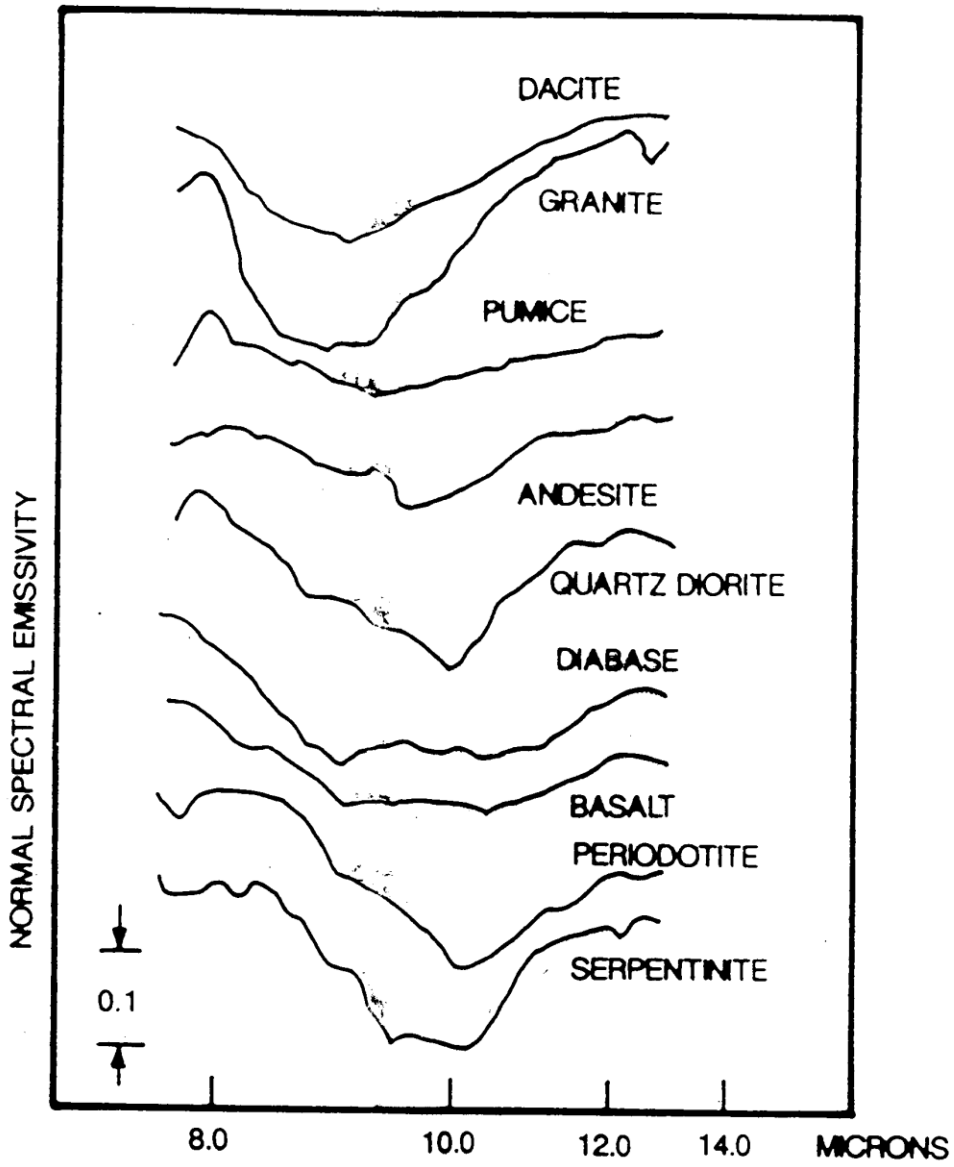


Figure 6.5 Thermal infrared emittance for some silicate minerals and rocks. From Henderson and Rock [13].

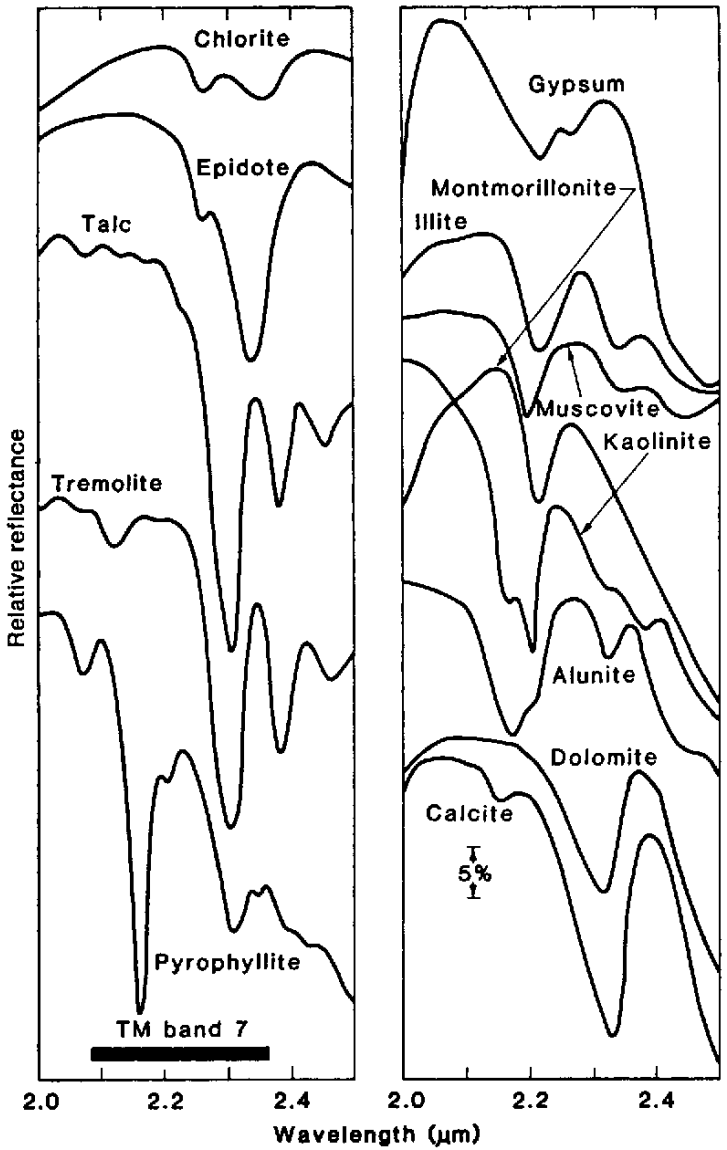
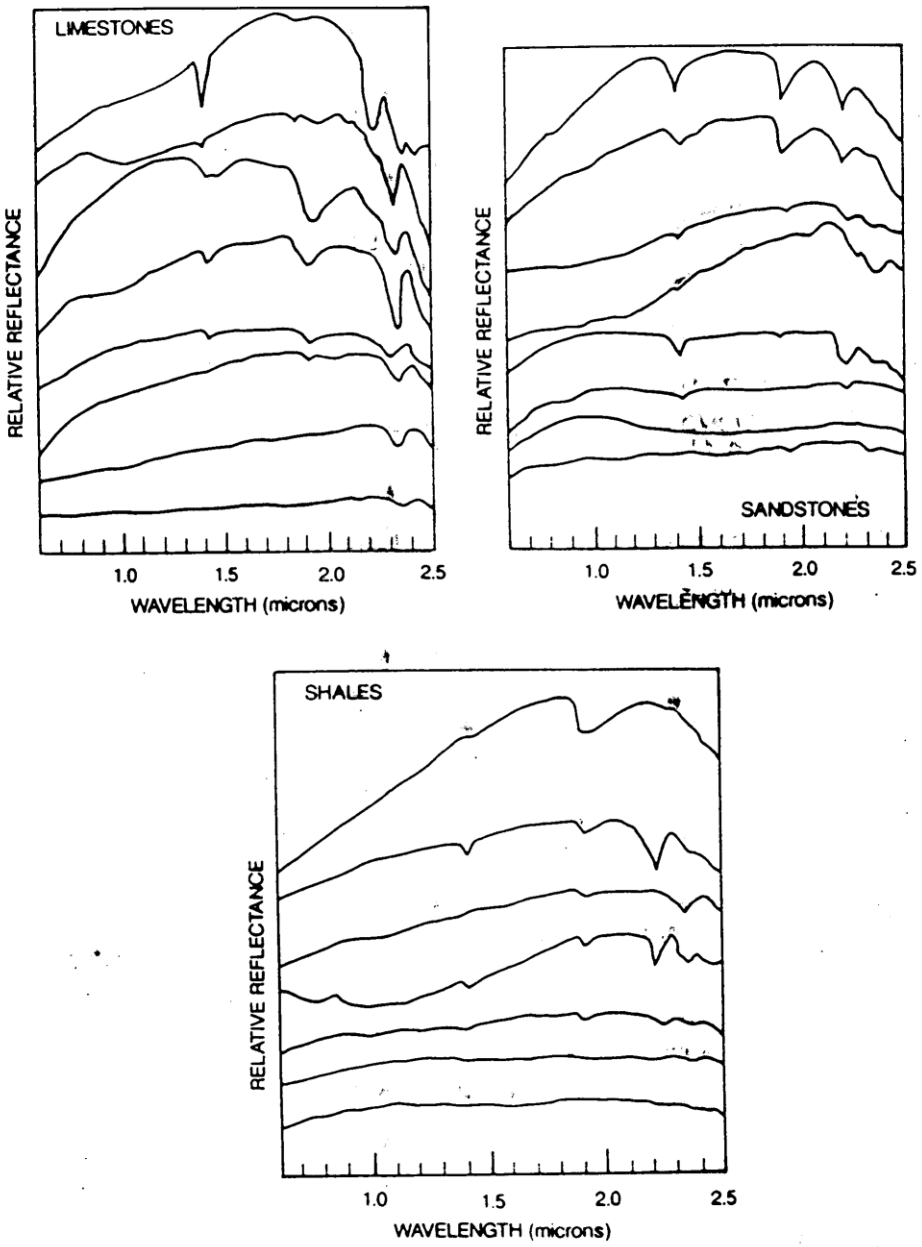
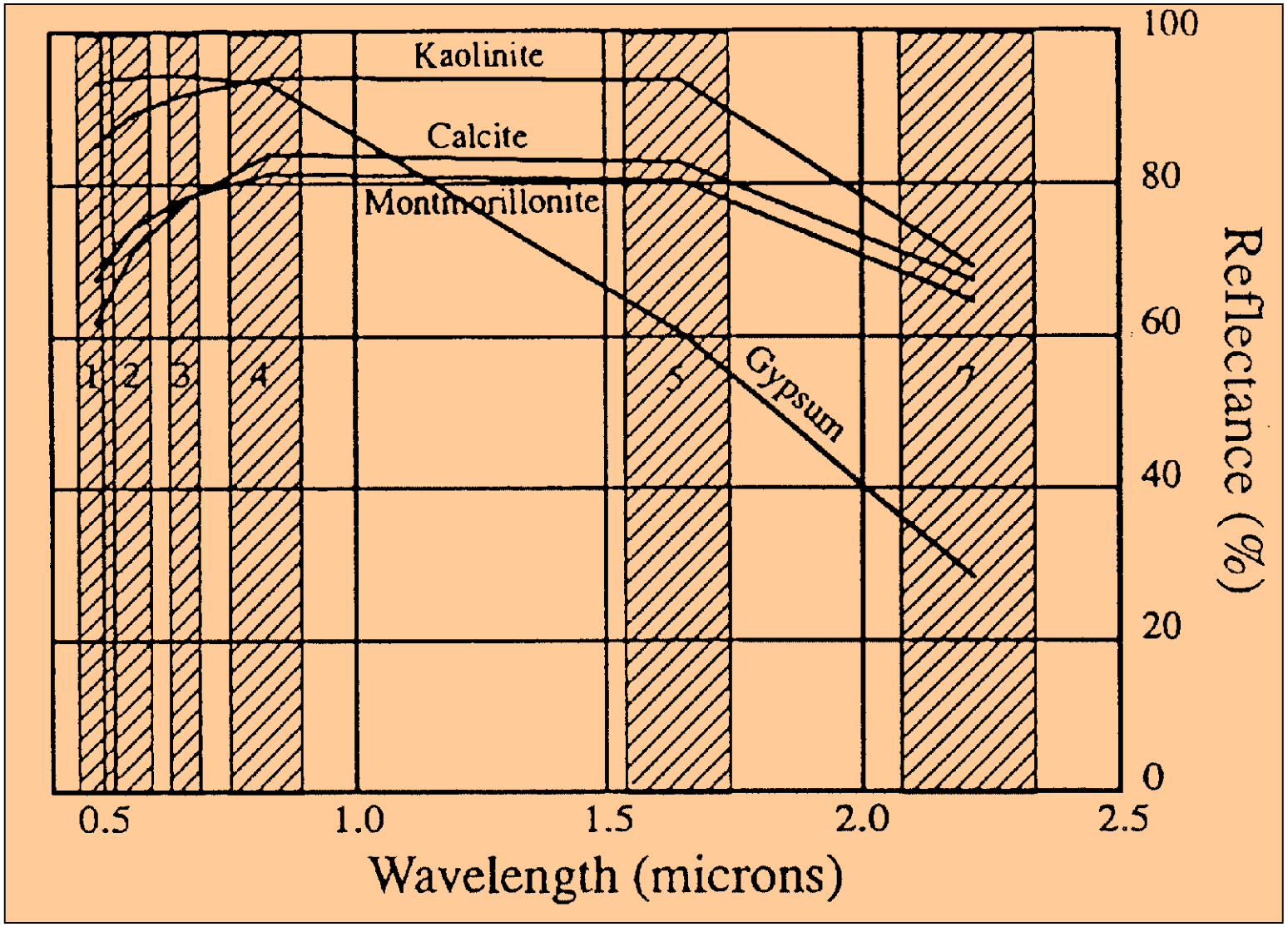


Figure 5.38 Selected laboratory spectra of minerals showing diagnostic absorptance and reflectance characteristics. The spectra are displaced vertically to avoid overlap. The bandwidth of band 7 of the Landsat TM (Chapter 6) is also shown. (From Goetz et al., 1985. Copyright 1985 by the AAAS. Courtesy NASA Jet Propulsion Laboratory.)

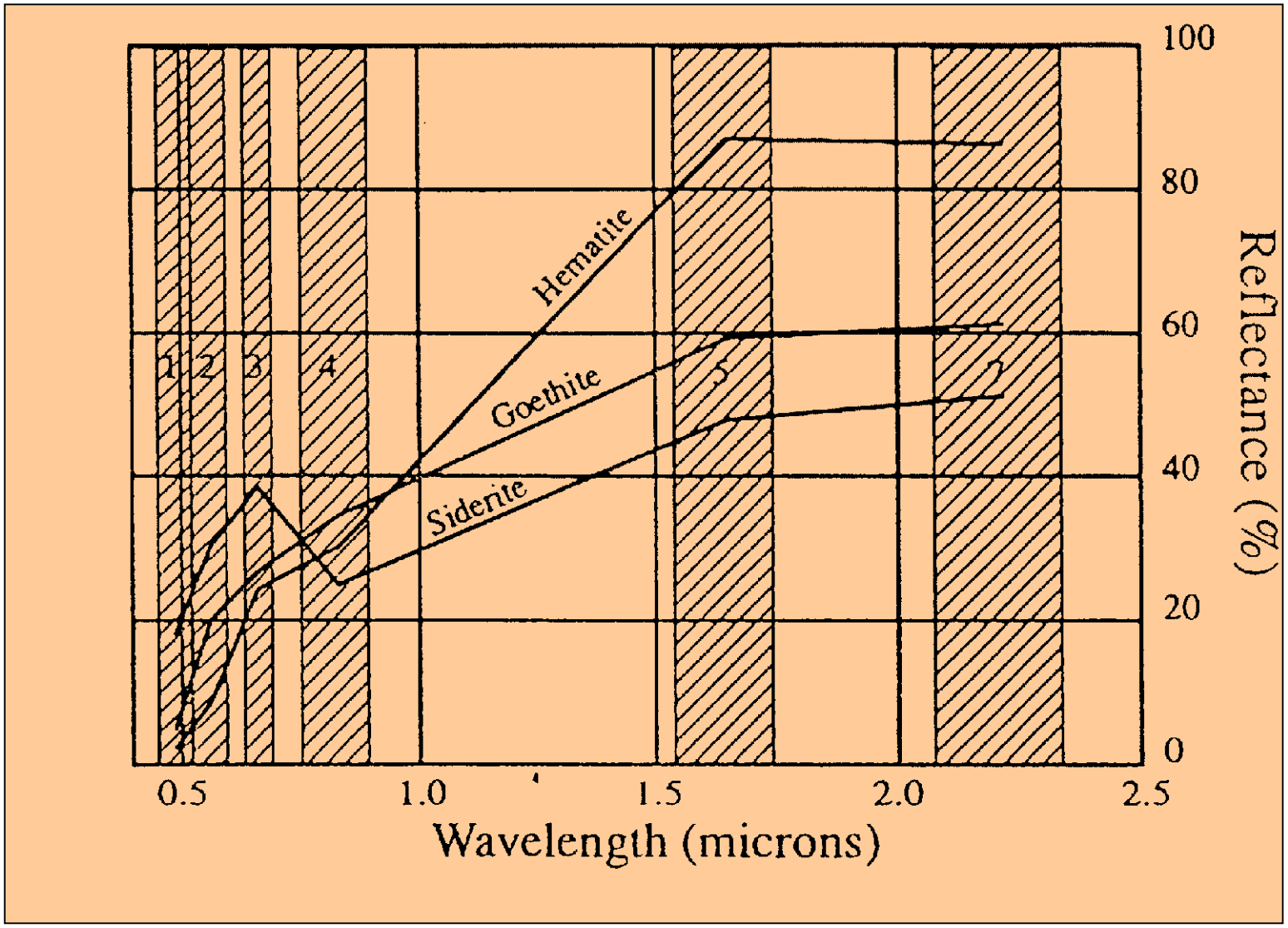


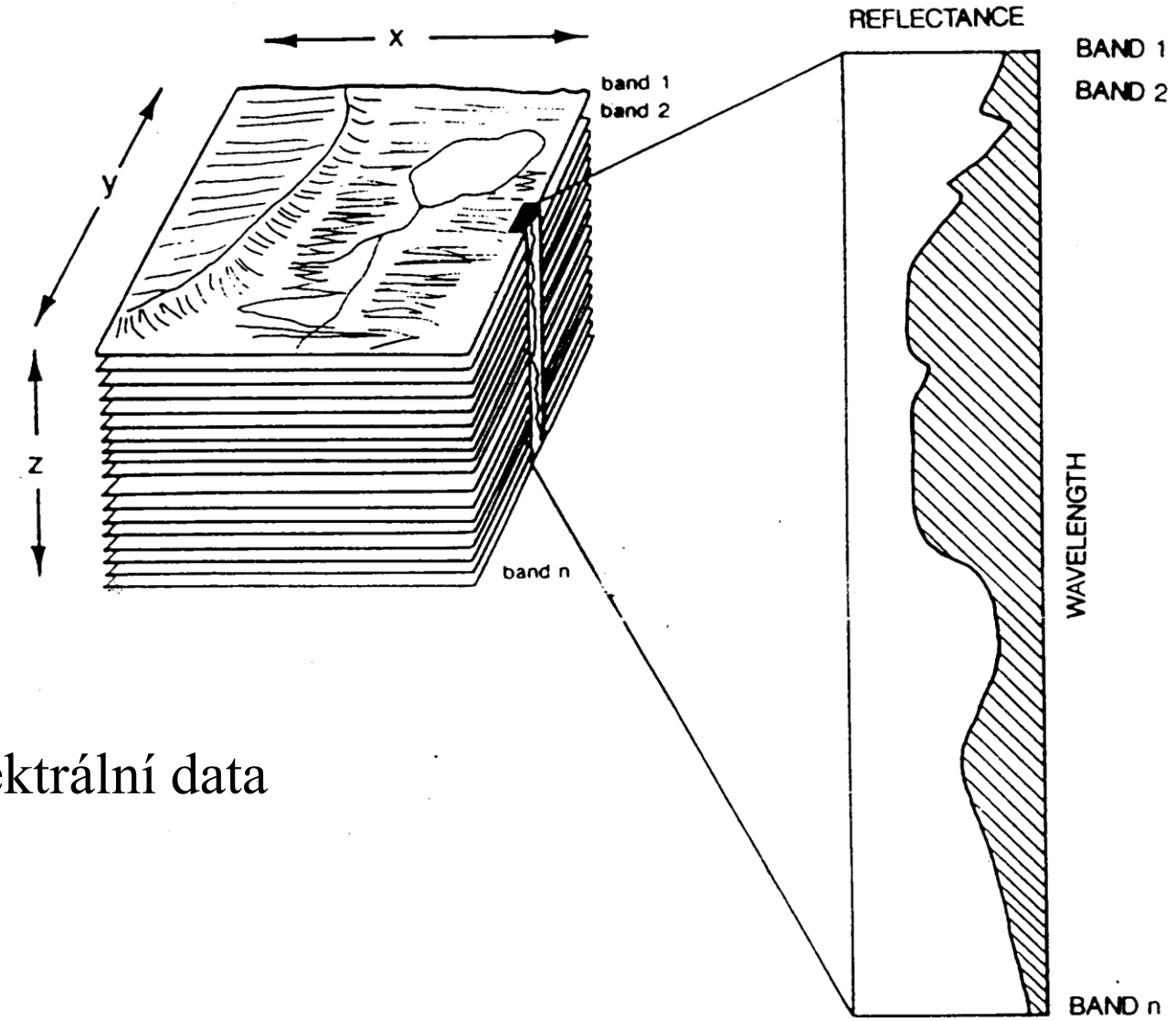
ure 6.8 Visible and near-infrared reflectance curves for rock families, including sandnes, shales, and limestones. Spectra are displaced vertically. From Hunt and Salisbury

odraznost některých minerálů v závislosti na vlnové délce – Landsat TM



odraznost některých minerálů v závislosti na vlnové délce – Landsat TM





hyperspektrální data

Figure 6.6 Diagram of a hyperspectral image cube consisting of "n" layers of images in "n" wavelengths. One may extract a reflectance curve for any given pixel in the image.

Problémy spektrální klasifikace

vždy pracujeme se smíšenými spektry

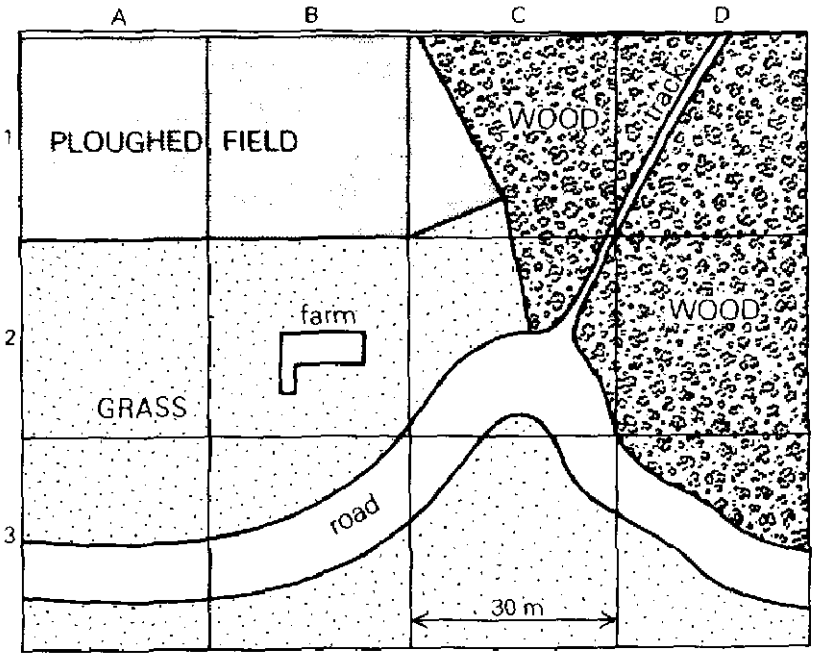
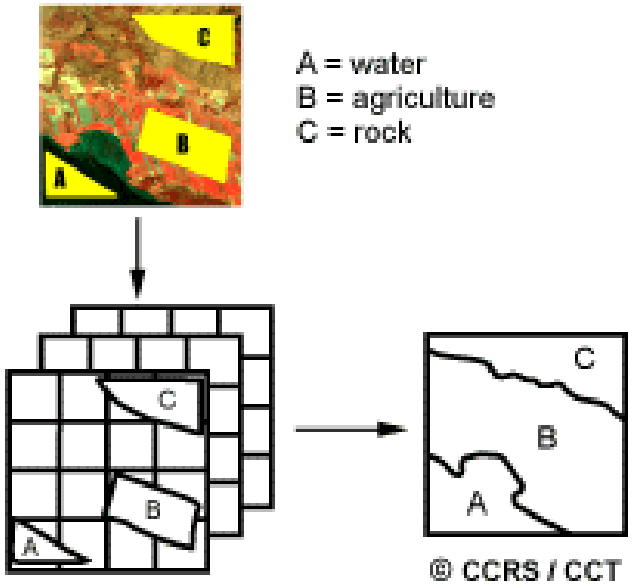
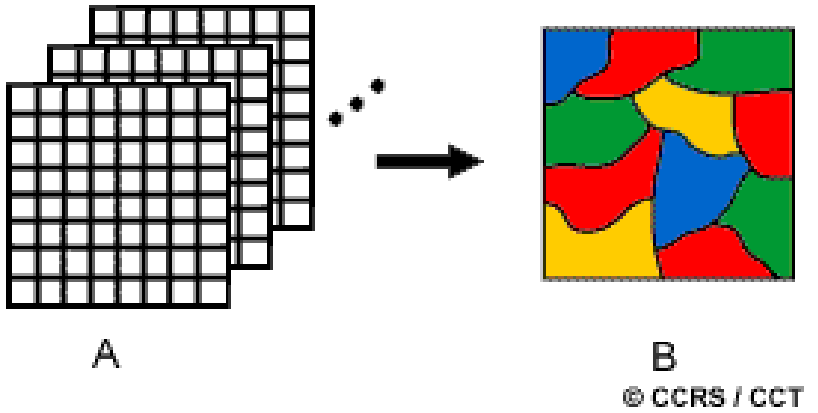


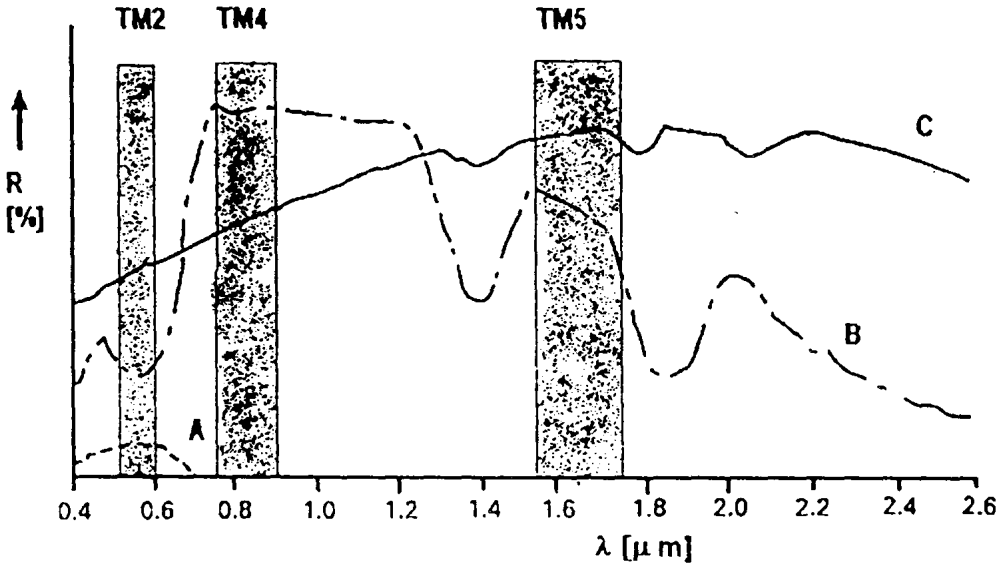
Figure 3.11 A series of 30-m pixels superimposed on the ground surface shows that most pixels include several objects and surface categories. Only pixels A1, B1 and D2 are 'pure'. The rest are mixed pixels. If the farm had a sufficiently high contrast with grass its effects on pixel B2 could be high enough that the pixel had a different brightness from those surrounding it. The farm might be detectable, but it could not be recognized as a farm. Similarly, the road could affect pixels A3, B3, C2, C3 and D3, and probably others beyond the map. Because road-containing pixels would be linked, however, the crude shape and orientation of the road could be seen. The track may be too narrow to have a noticeable effect. Pure luck has resulted in the boundary between the ploughed field and grass falling along a boundary separating four pixels. On the image it would be clear and represented accurately. All the other boundaries fall within pixels. Although they would contribute to the brightness of these pixels, on the image the boundaries would become steps in the brightness between pixels dominated by large classes. Their position and orientation would become 'blurred' by the rectangular raster.

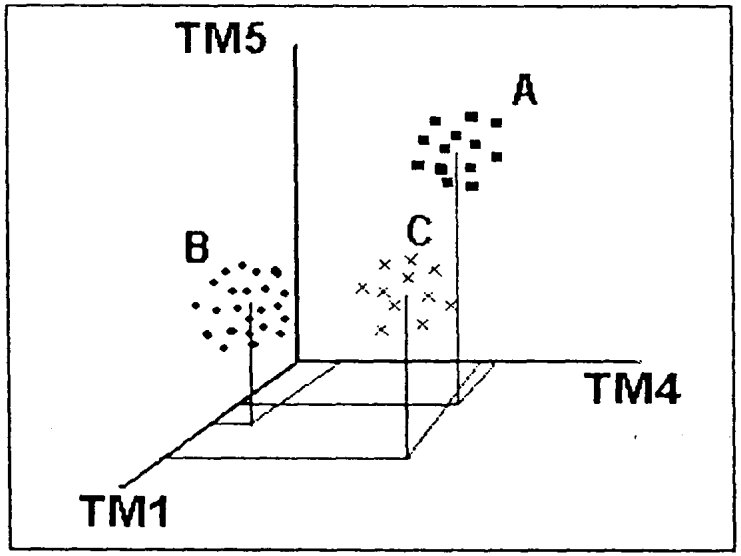
klasifikace

- řízená
- neřízená
- hybridní



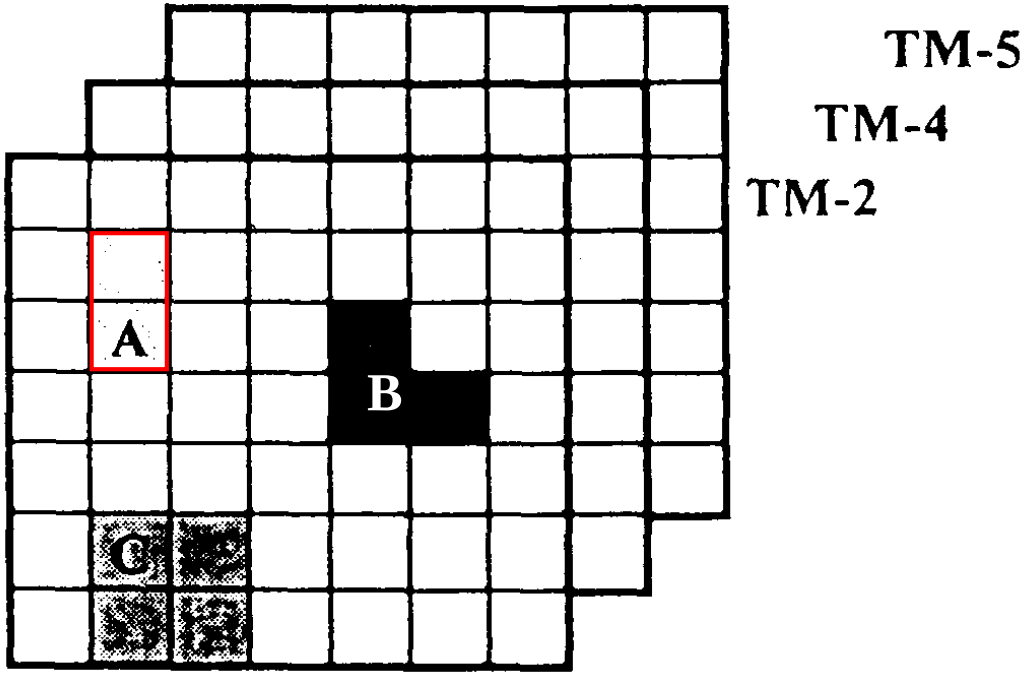






Obr. 9.1 Princip klasifikace multispektrálního obrazu.

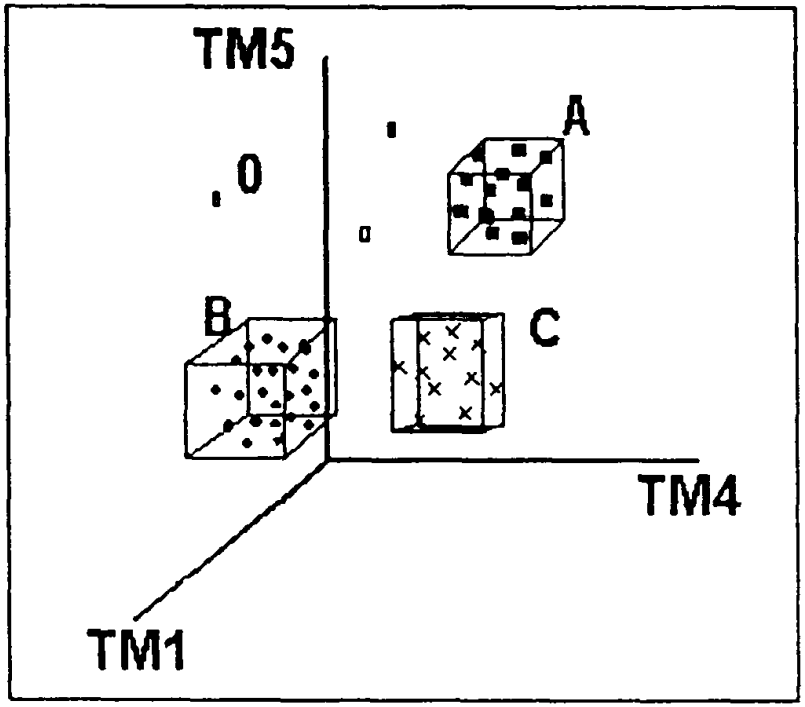
1. Trénovací etapa



2. Generování spektrálních příznaků

Třída A	Třída B	Třída C
$TM\text{-}2_A$	$TM\text{-}2_B$	$TM\text{-}2_C$
$TM\text{-}4_A$	$TM\text{-}4_B$	$TM\text{-}4_C$
$TM\text{-}5_A$	$TM\text{-}5_B$	$TM\text{-}5_C$

3. Použití vhodného rozhodovacího pravidla



4. Přiřazení určité třídy prvkům výsledného obrazu

A	A	A	B	B	A	0
A	A	B	B	B	0	0
A	A	A	B	B	0	0
A	A	A	B	B	B	0
A	A	A	A	B	B	B
A	C	C	C	C	B	B
0	C	C	C	C	B	B

	LEGENDA
A	vodní plochy
B	vegetace
C	holá půda
0	nezařazeno