CLASSIFICATION PLOTS

Menu item	*Module name*	*Scope*[1]	*Plot description*	*Details (reference)*
AFM (Irvine + Baragar 1971)	AFM	G	(Na_2O+K_2O) – FeOt – MgO ternary	AFM plot that serves to discriminate between calc-alkaline and tholeiitic subalkaline series (Irvine & Baragar, 1971).
SiO2 - FeOt/MgO (Miyashiro 1974)	Miyashiro	G	SiO_2 vs. FeOt /MgO binary	Diagram of Miyashiro (1974) distinguishing between tholeiitic and calc-alkaline igneous rocks.
SiO2 - K2O (Peccerillo + Taylor 1976)	PeceTaylor	G	SiO_2 vs. K_2O binary	Diagram proposed by Peccerillo & Taylor (1976) to distinguish various series of tholeiitic, calc-alkaline and shoshonitic rocks.
Co - Th (Hastie et al. 2007)	Hastie	G	Co vs. Th	Replacement for the previous plot of Peccerillo & Taylor (1976) using less mobile elements, designed by Hastie *et al.* (2007).
Molar Na2O – Al2O3 – K2O plot	NaAlK	G	Na_2O – Al_2O_3 – K_2O ternary	Diagram to distinguish meta-/peraluminous from peralkaline rocks as well as potassic, sodic and ultrapotassic suites.
A/CNK - A/NK (Shand 1943)	Shand	G	$Al_2O_3/(CaO+Na_2O+K_2O)$ vs. $Al_2O_3/(Na_2O+K_2O)$ (mol. %)	Classic A/CNK vs A/NK plot of Shand (1943) discriminating metaluminous, peraluminous and peralkaline compositions.
TAS (Le Bas et al. 1986)	TAS	V	SiO_2 vs. $(Na_2O + K_2O)$ binary	The principal variation of the TAS diagram, as proposed by Le Bas *et al.* (1986) and codified by Le Maitre (1989). Dividing line between alkaline and subalkaline series is that of Irvine & Baragar (1971).
TAS (Cox et al. 1979)	CoxVolc CoxPlut	V P	SiO_2 vs. $(Na_2O + K_2O)$ binary	Variation of the TAS diagram proposed by Cox *et al.* (1979) and adopted by Wilson (1989) for plutonic rocks.
TAS (Middlemost 1994)	TASMiddlemostVolc TASMiddlemostPlut	V P	SiO_2 vs. $(Na_2O + K_2O)$ binary	Variation of the TAS diagram proposed by Middlemost (1994).
Jensen (1976)	Jensen	V	Al – $(Fe^t$ + Ti) – Mg ternary	Ternary plot of Jensen (1976).
R1-R2 (De la Roche et al. 1980)	LarocheVolc LarochePlut	V P	R_1–R_2 binary (in millications).	Multicationic classification plot of De La Roche *et al.* (1980) (R_1: 4Si - 11(Na + K) – 2(Fe + Ti); R_2: 6Ca + 2Mg + Al).
Nb/Y - Zr/TiO2 (Winchester + Floyd 1977) Zr/TiO2 - SiO2 (Winchester + Floyd 1977)	WinFloyd1 WinFloyd2	V	log Nb/Y vs. log Zr/TiO_2 log Zr/TiO_2 vs. SiO_2 binary	Diagrams proposed by Winchester & Floyd (1977) for classification of volcanic rocks using incompatible element ratios.
Nb/Y - Zr/Ti plot (modified by Pearce 1996)	Pearce1996	V	log Nb/Y vs. log Zr/Ti	The log Nb/Y vs. log Zr/TiO_2 plot of Winchester & Floyd (1977) modified by Pearce (1996).
QAPF diagram (Streckeisen 1978)	QAPFVolc	V	QAPF – modal compositions	Modal QAPF diagram of Streckeisen (1978)
QAPF diagram (Streckeisen 1974)	QAPFPlut	P	QAPF – modal compositions	Modal QAPF diagram of Streckeisen (1974)

[1]Scope: G: general diagram, V: designed for volcanic rocks, P: designed for plutonic rocks

CLASSIFICATION PLOTS *(CONTD.)*

Menu item	*Module name*	*Scope[1]*	*Plot description*	*Details (reference)*
Feldspar triangle (O'Connor 1965)	OConnorVolc OConnorPlut	V P	Ternary plot Ab-An-Or	Classification diagram after O'Connor (1965) for silica-rich rocks (quartz > 10 %). It is based on CIPW-normative (volcanic, plutonic rocks) or modal (plutonic rocks) contents of albite, anorthite and K-feldspar.
P-Q (Debon + Le Fort 1983)	DebonPQ	P	P–Q binary (in millications)	Nomenclature diagram of Debon & Le Fort (1983). Its coordinates correspond to proportions of Kfs and Pl to Qtz (P: K - (Na + Ca), Q: Si/3 - (K + Na + 2Ca/3)).
B-A (Debon + Le Fort 1983)	DebonBA	P	B–A binary (in millications)	The B–A diagram (Debon & Le Fort 1983) defines six sectors (I - VI), reflecting alumina balance of samples (B: Fe + Mg + Ti, A: Al - (K + Na + 2Ca)).
B-A plot (modified by Villaseca et al. 1998)	Villaseca	P	B–A binary (in millications)	The B–A diagram (Debon & Le Fort 1983) with fields of various types of peralkaline rocks as outlined by Villaseca *et al*. (1998)
Middlemost (1985)	MiddlemostPlut	P	SiO_2 vs. (Na_2O + K_2O) binary	Classification diagram of Middlemost (1985) for plutonic rocks.

[1]Scope: G: general diagram, V: volcanic rocks, P: plutonic rocks

GEOTECTONIC PLOTS

Menu item	*Module name*	*Scope*[1]	*Plot description*	*Details (reference)*
Batchelor + Bowden (1985)	Batchelor	Gr	R_1–R_2 binary (in millications)	R_1–R_2 diagram (De La Roche *et al.*, 1980) with geotectonic implications after Batchelor & Bowden (1985). (R_1: 4Si - 11(Na + K) – 2(Fe + Ti); R_2: 6Ca + 2Mg + Al).
Maniar + Piccoli (1989)	Maniar	Gr	binary plots SiO_2 vs. K_2O, Al_2O_3, and FeOt/(FeOt+MgO); MgO vs. FeOt; CaO vs. FeOt+MgO; A/CNK vs. A/NK	Major-element based geotectonic classification of granitoids (Maniar & Piccoli, 1989).
Frost et al. (2001)	Frost	Gr	binary plots SiO_2 vs. FeOt/(FeOt+MgO); SiO_2 vs. Na_2O+K_2O-CaO ASI vs. A/NK	Major-element based classification of granitoids (Frost *et al.*, 2001).
A type granitoids (Whalen et al. 1987)	Whalen	Gr	binary plots Zr+Nb+Ce+Y vs. FeOt/MgO (Na_2O+K_2O)/CaO 10000*Ga/Al vs. (Na_2O+K_2O) (Na_2O+K_2O)/CaO K_2O/MgO FeOt/MgO Zr Nb Ce Y Zn Agpaitic index	Binary plots serving for distinction of A-type granitoid rocks after Whalen *et al.* (1987).
Pearce et al. (1984)	Pearce_granite	Gr	log(Y+Nb) vs. log Rb, log Y vs. log Nb, log(Ta+Yb) vs. log Rb, log Yb vs. log Ta	Trace-element based geotectonic classification of granitoids by Pearce *et al.* (1984).
Harris et al. (1986)	Harris	Gr	ternary plot Hf - Rb/30 - Ta*3	The diagram distinguishes among four types of collisional granites.
Sylvester (1989)	Sylvester	Gr	Al2O3+CaO)/(FeOt+Na2O+K2O) vs. 100*(MgO+FeOt+TiO2)/SiO2	Diagram proposed by Sylvester (1989) to distinguish the alkaline collision-related alkaline granites.
Schandl + Gorton (2002)	Schandl	G	log Ta/Yb vs. log Th/Ta Ta vs. Th Ta/Hf vs. Th/Hf Yb vs. Th/Ta	Discrimination of geotectonic environment of felsic volcanic rocks (rhyolites), proposed by Schandl & Gorton (2002). It is based on combination of four presumably little immobile trace elements (Ta, Yb, Th, Hf).

GEOTECTONIC PLOTS *(CONTD.)*

Menu item	*Module name*	*Scope*[1]	*Plot description*	*Details (reference)*
Verma et al. (2006) based on major elements	Verma	B	Suite of five diagrams based on log-transformed concentration ratios of major-element oxides	Discrimination of geotectonic environment of ultrabasic and basic rocks (SiO_2 < 52 wt. %), proposed by Verma *et al.* (2006).
Agrawal et al. (2008), La, Sm, Yb, Nb, Th based	Agrawal	B	Suite of five diagrams based on log-transformed concentration ratios of La, Sm, Yb, Nb and Th	Discrimination of geotectonic environment of ultrabasic and basic rocks, proposed by Agrawal *et al.* (2008). It is based on log-transformed concentration ratios of five trace elements (La, Sm, Yb, Nb, and Th), i.e., using four ratios ln(La/Th), ln(Sm/Th), ln(Yb/Th), and ln(Nb/Th).
Meschede (1986) Zr/4-2Nb-Y	Meschede	B	Zr/4 – 2Nb – Y ternary	(Meschede, 1986)
Mullen (1983) 10MnO-TiO2-10P2O5	Mullen	B	10 MnO – TiO_2 – 10 P_2O_5	(Mullen, 1983)
Pearce + Cann (1973)	Pearce_and_Cann	B	Zr – Ti/100 – 3 Y ternary, Zr – Ti/100 – Sr/2 ternary, log Zr – log Ti binary	(Pearce & Cann, 1973)
Pearce + Norry (1979)	Pearce_and_Norry	B	log Zr vs. log Zr/Y	(Pearce & Norry, 1979)
Pearce et al. (1977) MgO-FeOt-Al2O3	Pearce_et_al_1977	B	MgO – FeOt – Al_2O_3 ternary	(Pearce *et al.*, 1977)
Pearce (1982)	Pearce_1982	B	log Zr vs. log. Ti	(Pearce, 1982)
Shervais (1982)	Shervais	B	log Ti/1000 vs. log V	(Shervais, 1982)
Wood (1980)	Wood	B	Th – Hf/3 – Ta Th – Hf/3 – Nb/16 Th – Zr/117 – Nb/16	(Wood, 1980)
Pearce (2008) Nb/Yb – Th/Yb		U		(Pearce, 2008)
Pearce (2008) Nb/Yb – TiO2/Yb		U		(Pearce, 2008)
Müller et al. (1992) Potassic rocks binary		U		(Müller *et al.*, 1992)
Müller et al. (1992) Potassic rocks ternary		U		(Müller *et al.*, 1992)

[1]Scope: Gr: granitoids, B: basaltoids, U: universal (appropriate for a range of compositions).

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