# AR4 matrof.F (MATSIRO runoff submodel)

## 9.3 Calculation of runoff

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| --- | --- |
|  | L227-228 |

definitions of the 4 types of runoff can be found in L52-55. The calculation of baseflow is illustrated in L135-156 and L178-193, and the calculation of surface flow including (L198-204, surface storage overflow), (L205-207, saturation excess runoff) and (L208-214, infiltration excess runoff) is illustrated in L195-215.

### 9.3.1 Estimation of mean water table depth (For future plan I suggest using figure to illustrate the condition)

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|  | L161-167 |

the mositure(matric) potential is defined in L58, the uppermost half-saturated (or staturated?) layer is difined in L65, the mean water table depth is defined in L165.

### 9.3.2 Calculation of groundwater runoff

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|  | L139-142 & L181-184 |
|  | L143-147 & L185-189 |
|  | L148-149 & L190-191 |

the saturated hydraulic conductivity is defined in L57, the tangent value of mean surface slope is defined in L69, the mean length of surface slope is defined in L70, the critical water table depth is defined in L73 ( is the attenuation coefficient), the depth of the frozen soil surface is defined in L146, denotes the runoff flux from the th soil layer and is defined in L28

### **9.3.3 Calculation of surface runoff**

# AR6 matrof.F (MATSIRO runoff submodel)

## 9.3 Calculation of runoff

|  |  |
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|  | L289-290 & L293-294 & L297-298 |

Or

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|  | L281-283 |

definitions of the 4 types of runoff can be found in L69-72. The calculation of baseflow is illustrated in L171-192 and L221-236, and the calculation of surface flow including (L249-255, surface storage overflow), (L256-258, saturation excess runoff) and (L259-266, infiltration excess runoff) is illustrated in L246-266.

### 9.3.1 Estimation of mean water table depth

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|  | L197-206 |

the mositure(matric) potential is defined in L77, the uppermost half-saturated layer is difined in L84, the mean water table depth is calculated through above equation in L201

### 9.3.2 Calculation of groundwater runoff

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| --- | --- |
|  | L175-178 & L224-227 |
|  | L179-183 & L228-232 |
|  | L184-185 & L233-234 |

the saturated hydraulic conductivity is defined in L76, the tangent value of mean surface slope is defined in L89, the mean length of surface slope is defined in L90, the critical water table depth is defined in L98 ( is the attenuation coefficient), the depth of the frozen soil surface is defined in L182, denotes the runoff flux from the th soil layer and is defined in L40

### 9.3.3 Calculation of surface runoff