```fortran
1    C**AGVEL
2    C  Continuum Dynamics, Inc.
3    C  AGDISP Version 8.29 11/16/16
4    C
5          SUBROUTINE AGVEL(X,Y,Z,U,V,W)
6    C
7    C  AGVEL determines the mean velocity at a specified location
8    C
9    C  X      - X location
10   C  Y      - Y location
11   C  Z      - Z location
12   C  U      - U velocity
13   C  V      - V velocity
14   C  W      - W velocity
15   C
16         INCLUDE 'AGCOMMON.INC'
17   C
18         U=0.0
19         V=0.0
20         W=0.0
21   C
22         IF (Z.LE.0.0) RETURN
23         IF (NVOR.EQ.0) GOTO 10
24         IF (X.GE.0.0) THEN
25           DO N=1,NVOR
26   C
27   C  Quadrant 1 vortex
28   C
29             R=AMAX1(0.01,SQRT(ABS((Y-YBAR(N))**2+(Z-ZBAR(N))**2)))
30             B=G2PI(N)*GDKV(N)/AMAX1(R,RLIM)/R
31             V=V-B*(Z-ZBAR(N))
32             W=W+B*(Y-YBAR(N))
33   C
34   C  Quadrant 2 vortex
35   C
36             R=AMAX1(0.01,SQRT(ABS((Y-YBAL(N))**2+(Z-ZBAL(N))**2)))
37             B=G2PI(N)*GDKV(N)/AMAX1(R,RLIM)/R
38             V=V+B*(Z-ZBAL(N))
39             W=W-B*(Y-YBAL(N))
40   C
41   C  Quadrant 3 vortex
42   C
43             R=AMAX1(0.01,SQRT(ABS((Y-YBAL(N))**2+(Z+ZBAL(N))**2)))
44             B=G2PI(N)*GDKV(N)/AMAX1(R,RLIM)/R
45             V=V-B*(Z+ZBAL(N))
46             W=W+B*(Y-YBAL(N))
47   C
48   C  Quadrant 4 vortex
49   C
50             R=AMAX1(0.01,SQRT(ABS((Y-YBAR(N))**2+(Z+ZBAR(N))**2)))
51             B=G2PI(N)*GDKV(N)/AMAX1(R,RLIM)/R
52             V=V+B*(Z+ZBAR(N))
53             W=W-B*(Y-YBAR(N))
54           ENDDO
55         ENDIF
56   C
57   C  Helicopter rotor
58   C
59         IF (LMVEL.EQ.2) THEN
60           IF (X.GE.0.0) THEN
61             IF (JHEL.EQ.0.AND.WHEL.GT.0.0) THEN
62               YH=YHEL*CTS-ZHEL*STS
63               ZH=YHEL*STS+ZHEL*CTS
64               YY=Y*CTS-Z*STS
65               ZZ=Y*STS+Z*CTS
66               TEM=XO+UO*(ZH-ZZ)/WHEL
67               B=SQRT(ABS((YY-YH)**2+(X-TEM)**2))
68               IF (B.LT.RHEL) THEN
69                 U=U+WHEL*STU
70                 V=V-WHEL*CTU*STS
71                 W=W-WHEL*CTU*CTS
72               ENDIF
73             ENDIF
74   C
75   C  Helicopter upstream
76   C
77           ELSE
78             XXS=(Z-ZHEL)/FHEL
79             XXE=X+XXS
80             BS=XXS*XXS+(Y-YHEL)**2
81             BE=XXE*XXE+(Y-YHEL)**2
82             US=UO*RHEL*RHEL/BS
83             UE=UO*RHEL*RHEL/BE
84             U=U-US+UE+2.0*(US/BS-UE/BE)*(Y-YHEL)**2
85             V=V-2.0*(US*XXS/BS-UE*XXE/BE)*(Y-YHEL)
86           ENDIF
87   C
88   C  Propeller
89   C
90         ELSE
91           IF (NPRP.NE.0) THEN
92             DO N=1,NPRP
93               IF (X.GE.XPRP(N)) THEN
94                 R=SQRT(ABS((Y-YPRP(N))**2+(Z-ZPRP(N))**2))
95                 E=15.174*R/CPXI(N)
96                 UA=11.785*CPUR/CPXI(N)/(1.0+0.25*E*E)**2
97                 VA=5.894*CPUR*(1.0-0.25*E*E)/CPXI(N)**2/(1.0+0.25*E*E)**2
98                 VS=VPRP(N)/RPRP(N)
99                 IF (R.GT.RPRP(N)) VS=0.0
100                U=U+UA
101                V=V+VA*(Y-YPRP(N))+VS*(Z-ZPRP(N))
102                W=W+VA*(Z-ZPRP(N))-VS*(Y-YPRP(N))
103              ENDIF
104            ENDDO
105          ENDIF
106        ENDIF
107  C
108  C  Mean crosswind
109  C
110  10      IF (LSPFLG.EQ.1) THEN
111          CALL AGDISPcalcMeteorology(UTEM,VTEM,WTEM)
112          U=U+UTEM
113          V=V+VTEM
114          W=W+WTEM
115        ELSE
116          IF (LMCRS.EQ.1) THEN
117            IF (LCANF.EQ.0) THEN
118              B=ALOG((Z+ZO)/ZO)-PSTAB
119            ELSE
120              IF (Z.LE.HCAN) THEN
121                B=UCAN*EXP(ALPHAC*(Z/HCAN-1.0))
122              ELSE
123                B=UOPN*(ALOG((Z/HCAN-DOC+ZOC)/ZOC)-PSTAB)
124              ENDIF
125            ENDIF
126            U=U+B*CCW
127            V=V-B*SCW
128          ELSEIF (LMCRS.EQ.2) THEN
129            TEM=AGINT(NWIND,WINDHTV,WINDSPV,Z)
130            U=U+TEM*CCW
131            V=V-TEM*SCW
132          ENDIF
133        ENDIF
134  C
135  C  Ground sprayer
136  C
137        IF (LMVEL.EQ.0) THEN
138  C       IF (LMVEL.EQ.0.AND.Y.LE.0.0) THEN
139          IF (RGJET-Z.LE.XGJET) THEN
140            W=W-UGJET
141          ELSE
142            W=W-UGJET*(XGJET/(RGJET-Z))**CGJET
143          ENDIF
144        ENDIF
145  C
146  C  SPRAY GUN
147  C     RADIUS=SQRT((X+XO)**2+Y*Y+Z*Z)
148  C     VELOCJ=2.0*8.2*(0.0291/(RADIUS+0.0291))**0.3  !0.57
149  C
150  C     VELOCJ=6.2/(RADIUS+0.0291)
151  C     U=U+VELOCJ*X/RADIUS  !X/RADIUS
152  C     V=V+10.0*VELOCJ*Y/RADIUS
153  C     W=W+VELOCJ*Z/RADIUS  !Z/RADIUS
154  C
155        RETURN
156        END
```